Kemps Creek Industrial Development

Economic Appraisal

March 2019

MacroPlanDimasi

Quality Assurance

Report Stage	Author	Date	Review	Date
Draft	Dr Nigel Stapledon	7 June 2018	Wayne Gersbach	7 June 2018
Final Draft	Dr Nigel Stapledon	19 July 2018	Wayne Gersbach	26 July 2018
Final	Dr Nigel Stapledon	6 March 2019	Michael Tilt	7 March 2019

Prepared for:

Altis Property Partners and Frasers Property Australia

Table of contents

Executive Summary

The NSW State Government's has a clearly stated objective to make Sydney more competitive by, inter alia, increasing the supply of industrial land to service Sydney's employment growth and to maintain downward pressure on prices. This commitment was embraced in the 2013 proposal to add 4,600 hectares to the WSEA employment area.

The current period of strong economic growth in the Sydney Metropolitan Area (SMA) has, however, highlighted an inadequate supply of industrial land. The Urban Development Institute of Australia (UDIA) has argued that the supply of zoned but undeveloped land is inadequate to meet demand in both the short and medium term, and the Greater Sydney Commission (GSC) has also recognised the risk that the supply of zoned but undeveloped land, while seemingly large, is in practice insufficient.

The value of industrial land in western Sydney increased by 80% in three years to March 2018. The contrast with Melbourne's experience suggests that an inadequate supply of industrial land is the chief culprit. If not addressed immediately, this threatens to stymie economic growth and makes a compelling case for a substantial increase in the supply of employment land in the immediate period ahead.

Beyond the current cycle, with projected strong growth in demand going forward, there is a substantial need for additional land to be zoned for industrial use in both the short and long-term. As the GSC has stated[1], "the servicing of existing and new land zoned for industrial and urban services is therefore a priority to support the continued growth of the economy and local jobs."

The long-term demand is supported by the overall growth in the SMA economy and the long-term gravitation of industrial users towards outer western Sydney. The State Government's significant investment in transport infrastructure, which will significantly increase the connectivity of the outer western areas, including the Western Sydney Employment Area (WSEA) and the adjacent new Western Sydney Airport (WSA) at Badgerys Creek, will further accentuate the shift of industrial uses to these areas.

In the period 2016-36, official projections for employment in the manufacturing, wholesale and transport and warehousing sectors – the principal users of industrial land - in the three WSEA LGAs are projected to rise by 42%. The transport and warehousing sector is projected to double. Given the go-ahead to the new WSA airport, which is a major catalyst for growth in this area, there is an upside potential to these growth and demand projections.

There is a compelling economic case, both short-term and long-term, to make significantly more land available in Sydney's outer west for industrial use. Over the short-term (1-5 years), between 300-400 hectares of employment land will be needed per annum to meet demand and address the shortfall which has emerged.

[1] Greater Sydney Commission, Greater Sydney Region Plan 2018, p.129

Introduction and Background

MacroPlan Dimasi has been commissioned by Altis Property Partners and Frasers Property Australia to provide an economic impact assessment to inform the development of land at Mamre Road and Bakers Lane, Kemps Creek for an industrial warehouse centre.

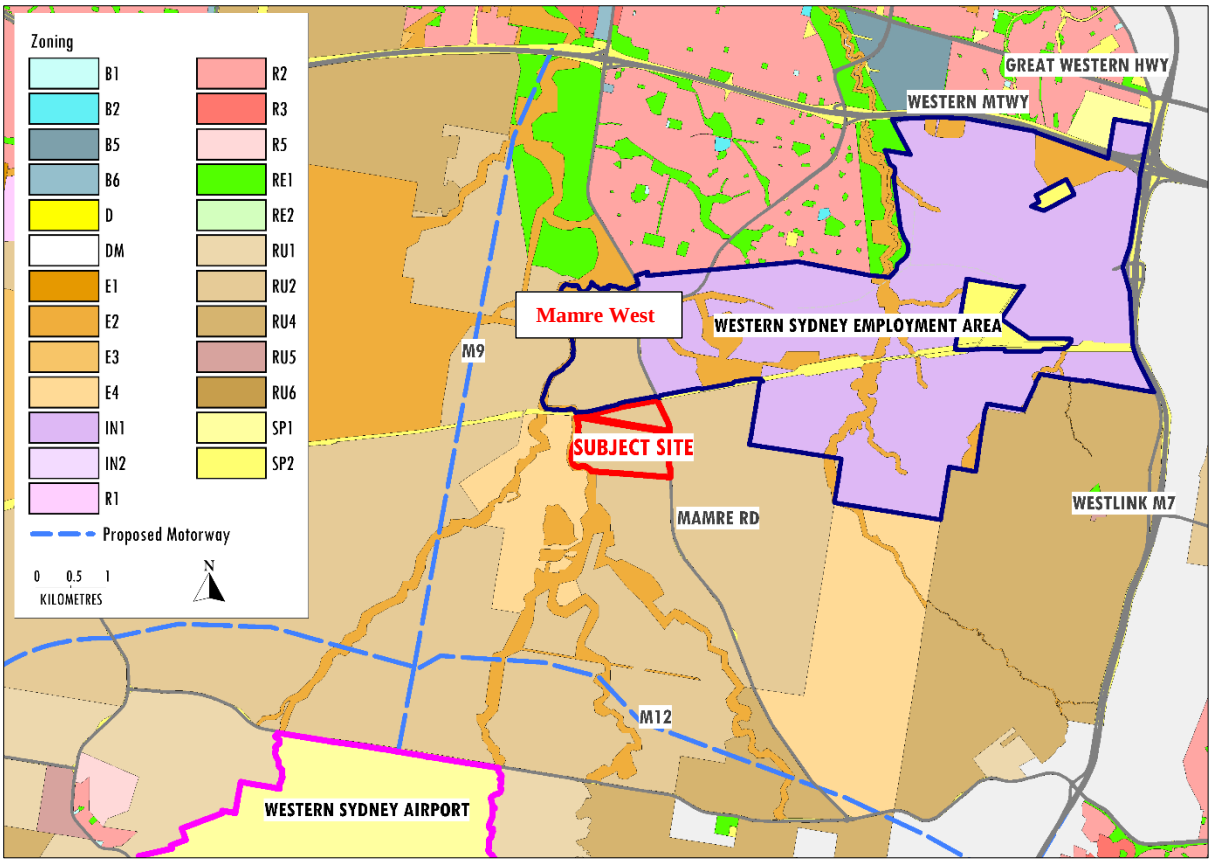
1.1 Subject Site

Comprising of land on the west side Mamre Road, the site encompasses a total land area of approximately 118 hectares. The site is currently undeveloped and unoccupied, and zoned for rural use. The site is extensively cleared and is currently used for grazing purposes.

The subject site is proximate to the broader Erskine Park industrial/employment lands precinct and is adjacent to the Mamre West section of the WSEA which was rezoned for employment purposes in 2016.

The site has a significant frontage to Mamre Road, which directly links with the M4 Motorway to the north, and to Elizabeth Drive to its south. The site will also link to the proposed M12 Motorway which will link the M7 Motorway to the new Western Sydney Airport (WSA). The site is very well connected to the existing and soon-to-be-upgraded Sydney Orbital Motorway system.

Figure 1 Map of Subject Site



1.2 Strategic and Regional Context

The subject site is located at Mamre Road, Kemps Creek, within the Penrith LGA. It is situated 50kms west of the Sydney CBD, 27km west of the Parramatta CBD and 11km south-east of the Penrith CBD.

The site is located adjacent to the **Western Sydney Employment Area (WSEA)** and has direct links to Sydney's north-west and south-west growth corridors, identified as priority precincts by the NSW State Government. Most notably, the site is in proximity to the future Western Sydney Airport (WSA) at Badgerys Creek.

In 2013 the State Government released its 'Broader Western Sydney Employment Area Draft Structure Plan' which outlined a significant expansion of the WSEA. The State Government's vision for the this Broader WSEA is "to provide well-located, serviced employment lands to secure the State's future productivity and economic growth."

The Broader WSEA plan is to add 6,329 hectares of employment land (WSEA extension) to the current 1,750 hectares in the established WSEA, making a total 8,079 hectares. The subject site is located within Precinct C (South Creek) of this extension to the WSEA.

The draft structure plan was a follow-up to the 2011 report 'NSW 2021: A Plan to Make NSW Number One'. One of its core five strategies was to "rebuild NSW's economy", restore economic growth and establish NSW as the "first place in Australia to do business". Specifically, to increase the competitiveness of doing business in NSW, it targeted making "more land available for housing and jobs".

The expansion of the WSEA was 'endorsed' in the 2014 'A Plan for Growing Sydney' which gave significant emphasis to the role of Western Sydney. The 2014 Plan sought to transform the productivity of Western Sydney through growth and investment (Direction 1.4) and in that regard, noted (Action 1.4.2) that:

> "The recent (proposed) expansion of the Western Sydney Employment Area will target jobs growth stimulated by Badgerys Creek Airport and proposed new transport infrastructure. Integrating new and existing employment precincts with transport infrastructure will attract business investment and activity. Flexible planning controls are also central to this approach.
>
> The Western Sydney Employment Area will be the single largest new employment space in the Sydney Metropolitan Area. Located on the intersection of the M7 and M4 Motorways near Eastern Creek, it will significantly expand the employment potential in this part of Sydney."

In 2015 the State Government announced a broader investigation into area around the new WSA airport, with the WSEA Extension now forming part of the **Western Sydney Airport Priority Growth Area** which encompasses a broader extent of land around the new airport and the Western Parkland City that is currently being investigated for future urban uses.

1.3 Planning Context

Altis and Frasers Property Australia wish to develop the subject land for warehousing and logistics purposes.

The employment generated for the proposed development will be 800 operational jobs and 500 construction jobs.

The development on the subject site will, when fully complete, create over half a million square metres of building space, comprising warehouses and offices. It will employ approximately 2,500 workers, including transport and logistics workers and office support staff. The construction phases of the project will generate about 1,500 full-time equivalent jobs.

As the value of the proposed project exceeds $50 million, a State Significant Development (SSD) pathway is contemplated.

1.4 Industrial Development

The WSEA precinct has evolved due to its proximity to the M4 and M7 motorways. Many industrial businesses have opted for industrial locations in western Sydney in the past ten or more years, particularly at the junctures of the Sydney Orbital Road System.

The provision of newer, larger and more suitable industrial sites in Eastern Creek, Erskine Park and Mamre West has assisted in enticing businesses out to western Sydney. This movement has also been facilitated by significant investment in road and freight infrastructure, with the Sydney Road Orbital Network representing the pivotal infrastructure item.

Extensive road upgrades planned for outer western Sydney will reinforce the importance of the Sydney Orbital Road Network going forward. With regard for the subject site, a significant road infrastructure item is the Mamre Road upgrade, which connects to the M4 and to the M7, and the proposed M12 motorway, south of the site, which will connect the M7 to the Northern Road via the WSA at Badgerys Creek.

The commitment to the WSA at Badgerys Creek, and proposals for freight lines into intermodal terminals in the WSEA, will only increase the demand for industrial land in the area.

1.5 Scope of Report

Having set out the planning and strategic context, the balance of this report looks in more detail at the supply and demand fundamentals in the market for employment land, and the economic impact of the proposed development.

In section 2, the report looks at the state of supply in employment land and highlights the shortfall in supply which has led to upward pressure on prices. It points to the need for a significant increase in the supply of zoned employment land in the short-term, to which the subject site would make a valuable contribution. In section 3 the report looks at the state of demand in the short-term and in the long-term, with the SMA economy, and the western Sydney economy in particular, projected to expand strongly over the next two decades.

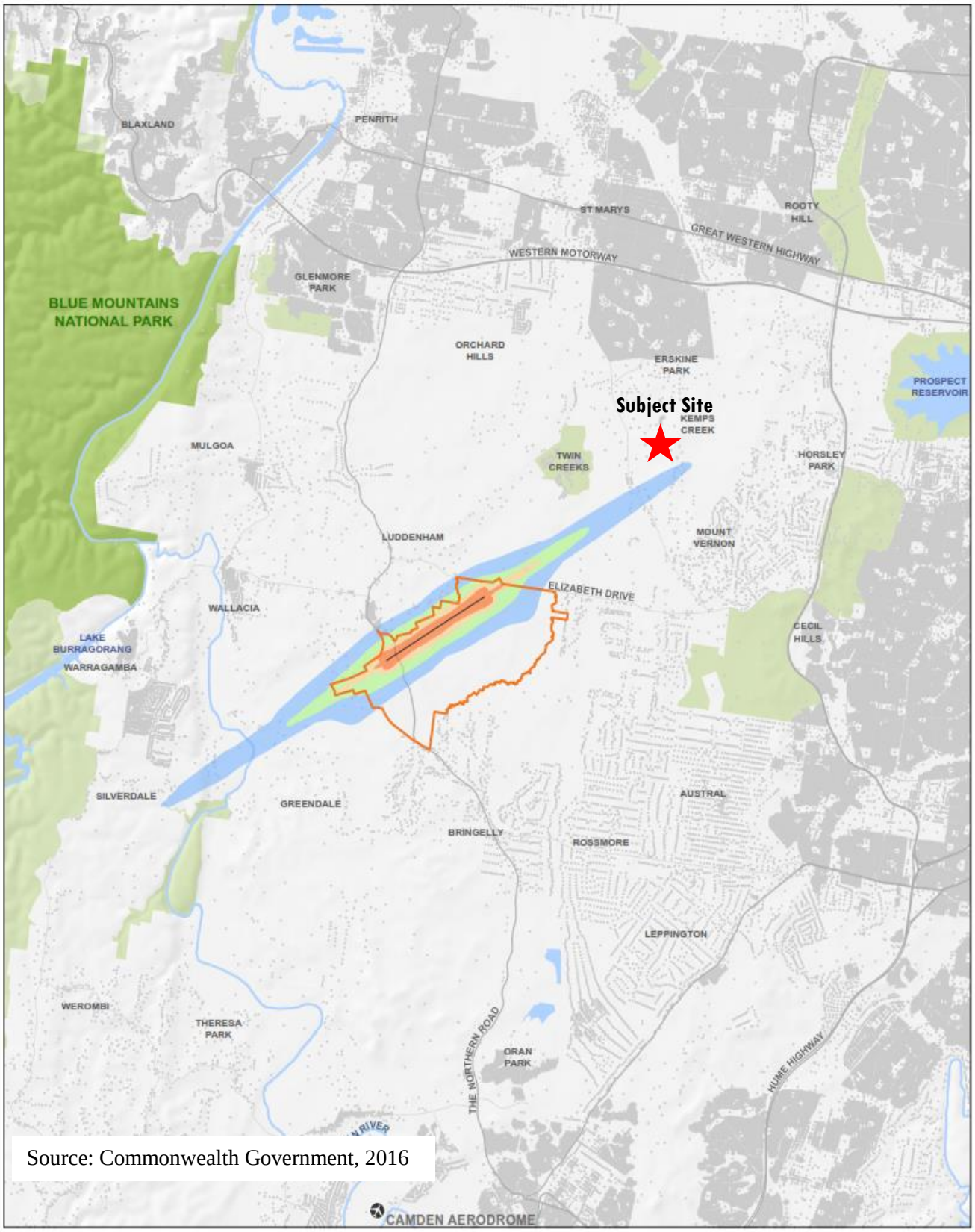
Section 4 looks more closely at the short-term and long-term growth potential in the broader WSEA area in which the subject site is located. The high potential demand is supported by a range of major infrastructure projects underway and in the pipeline – outlined in section 5 - which will continue to strengthen the locational advantage of the WSEA for transport and logistics industries.

In section 6, the report concludes by summarising the strong economic benefits which development of the subject site will generate in terms of alleviating the current shortfall in employment land and

associated market pressures and supporting both short-term and long-term growth of Western Sydney and the broader SMA economy.

There are a number of appendices to the report which add additional supporting background information.

Figure 2 WSA Australian Noise Exposure forecast (ANEC) Stage 1



Source: Commonwealth Government, 2016

2 Sydney's Industrial Land Market - State of Supply

The long-term trend within large cities globally, and evident in Sydney, is for manufacturing, wholesale and logistics industries to migrate from inner areas to outer areas which offer space and proximity to transport networks. This trend, which is detailed in ***Appendix 7.1***, underpins both demand for, and supply of, industrial land. In terms of supply, it implies the need for an expansion of industrial lands in the outer west, particularly in areas with proximity to the new WSA.

Against this backdrop, in this section we look at the trends in and current estimates of the supply of industrial land in the Sydney Metropolitan Area (SMA) market and in the Western Sydney Employment Area (WSEA), and indications of likely increases in supply. For this analysis, the principal source of data is the State Government's Employment Land Development Monitor (ELDM) report, periodically produced by the Department of Planning and Environment (DPE).

2.1 Sydney Metro Industrial Land

2.1.1 Total Zoned Employment Land

The ELDM reports indicate short-term trends in the supply of employment land in the Sydney Metropolitan Area (SMA). The total stock of zoned employment land in the SMA was estimated by the ELDM to be 13,826 hectares in 2017. Of this, about 10,784 hectares or 80% was developed and in use or vacant and seeking a use, and 3,042 hectares was undeveloped.

While long-term statistics are not available, for the period 2010-17 the amount of zoned employment land appears to have shown only marginal growth from about 13,500 hectares in 2010, to an estimated 13,826 hectares in 2017. Over half the rise in zoned employment land in 2017 reflects zoning of land in Moorebank for the Moorebank Intermodal Transfer project. Allowing for that, growth has been negligible. However, the 2010 ELDM report suggests there was more substantial growth in the decade to 2010, with that earlier expansion in zoned land associated with development of employment land on the transport corridor along the M7 which opened on 16 December 2005.

2.1.2 Zoned and Undeveloped Employment Land – Medium Term Supply

The ELDM statistics have 3,032 hectares of undeveloped employment land in 2017, of which 663 hectares is serviced (water, utility) and 2,379 hectares is un-serviced.

In its 2017 appraisal of Sydney's industrial land stocks, the UDIA Employment Lands Report[2] estimates that about 700 hectares of the (3,032 hectares of) zoned and undeveloped land is not available to meet demand either because of its remote location or because it is otherwise undevelopable. This would take the supply of zoned and undeveloped land down to around 2,300 hectares or, based on the DPE's take-up estimate of 163 hectares per year, about 14-years of supply.

[2] UDIA Employment Lands Report 31/08/2017
http://www.udiansw.com.au/uploads/docs/UDIA_Employment_Lands_Paper_FINAL.pdf

Of this 2,300 hectares, the UDIA notes that a significant amount (some 25-50%) of this zoned land is likely to be lost to 'constraints, utilities, services and infrastructure'. The overall effect is to reduce the 'real' amount of zoned and undeveloped land to 1,450 hectares which, based on 163 hectares per year, would represent around 9 years supply.

The UDIA also notes that the take-up rate of 163 hectares per annum reflects a number of years of sub-par growth in the SMA economy, including the period during the height of the resources boom when a high $A was putting maximum pressure on manufacturing. If we look at approval for factories and warehouses, this points to a significant lift in the take-up of land – and strongly supporting the UDIA argument. UDIA therefore suggests that a more realistic take-up rate of around 200-300 hectares per annum should be applied. That would have supply equivalent to 4.8-7.2 years supply. If judged against the DPE's benchmark of 8-10 years supply, it suggests an inadequate supply.

Table 1 - Estimates of Zoned Developed and Undeveloped Land - 2017

Hectares of Land	Undeveloped	Developed	Total
Total SMA	3,032	10,794.0	13,825.9
	Undeveloped	Years Supply	DPE Benchmark
Serviced	663	4.1	5-7
Not Serviced	2,369		
Total	**3032**	**11**	**8-10**
UDIA Estimates of Actual Developable Land			
Serviced	375	1.2-1.9	5-7
Not Serviced	1,925		
Total excluding remote & undevelopable	2,300	7.7-11.5	8-10
Total less loss to constraints, etc	**1,450**	**4.5-7.2**	**8-10**
Source: ELDM 2017			

2.1.3 Zoned, Undeveloped but Serviced Land – Short-term Supply

Undeveloped but serviced land can more readily meet demand than un-serviced land, so it is characterised as short-term supply.[3] The ELDM data shows the supply of undeveloped, serviced land declined from 1,012 hectares in 2010 (6.2 years supply), to a low point of 450 hectares in 2015 (2.8 years), before rising to the 663 hectares of supply in 2017. However, the increase in supply in 2017 almost wholly reflects re-zoning of land in Moorebank, linked to the Moorebank Intermodal Terminal, which will be absorbed in the short-term and effectively taken out of the market. Allowing for this fact, the supply of undeveloped, serviced land is probably still only about 500 hectares or around 3-years supply.

If this amount is discounted for unusable, constrained land (as per UDIA's argument above), the actual level of short-term supply would be about 25% lower than the ELDM estimates, at around 375 hectares or 1.2-1.9 years supply.

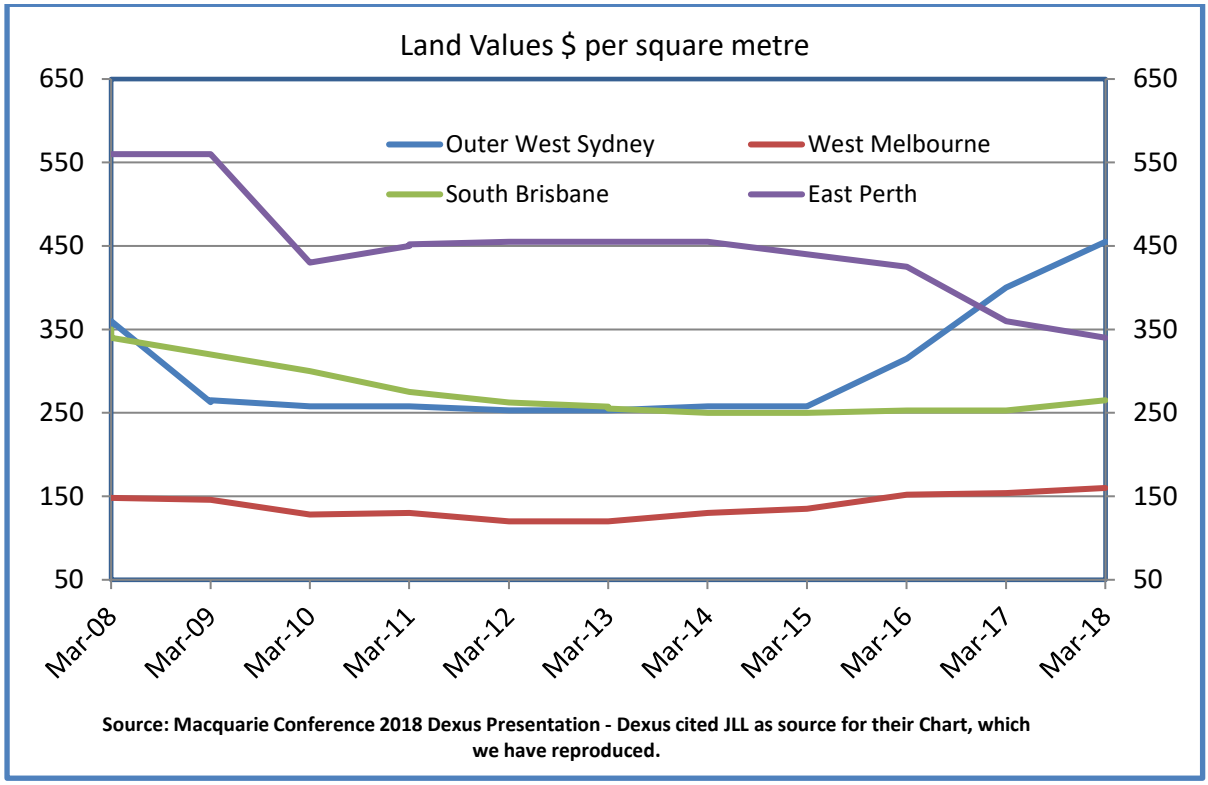
On that basis, UDIA concludes that there is an "immediate short-term supply shortfall" in the SMA. This conclusion is supported by the consensus of market reports which point to upward pressure on prices as evidence of market tightening.

[3] If land is un-serviced, the time taken for it to become useable by industry is necessarily longer.

As Figure 3 highlights, the average value of industrial land in outer Western Sydney has risen by about 80% in the three-year period 2015-2018. Over that same period, industrial land values in the Melbourne market, which were at the same level in 2015, have barely moved. The Melbourne economy is, if anything, growing more strongly than the Sydney economy, but estimates are that it has at least 20 years supply of industrial land, so the strong demand has not come up against a supply constrained market.[4] The upshot is that, more than probably reflecting constrained supply, the Sydney market has become less competitive.

The Greater Sydney Commission has recognised the risk posed for the SMA economy. In its 2018 final Greater Sydney Region Plan, it noted that "while the data shows 3,033 hectares as being undeveloped, not all this land is currently serviced with water and lead-in sewer infrastructure, which creates a risk in delivering and maintaining a competitive industrial market. …. Therefore, there is a need to provide a sufficient supply of industrial and urban services land and have a consistent policy position to keep downward pressure on land values."[5] The price rise that Sydney has experienced suggests that a sufficient supply of land has not been delivered and the risk to a competitive has materialised.

Figure 3 Average Industrial Land Values



Source: Macquarie Conference 2018 Dexus Presentation - Dexus cited JLL as source for their Chart, which we have reproduced.

[4] https://www.planning.vic.gov.au/__data/assets/pdf_file/0023/115187/Final_2017_Industrial_UDP_Report.pdf
[5] GSC *A Metropolis of Three Cities* - the Greater Sydney Region Plan page 130. https://www.greater.sydney/metropolis-of-three-cities/introduction

2.2 Western Sydney Employment Area

The long-term shift of manufacturing, wholesale and logistics industries from inner and middle Sydney to the outer areas is reflected in the current distribution of employment (industrial) land. In terms of Sydney's three cities, the Eastern City accounts for 11% of employment land, with 34% in the Central City, and 39% in the Western City, based around the new Western Sydney airport.

The LGAs which cross-over the WSEA and which will be impacted by its expansion are Penrith, Liverpool and Blacktown. These account for 5,223 hectares or 38% of the stock of employment land.

Table 2 - Zoned Developed and Undeveloped Land by LGA

Hectares of Land	Undeveloped	Developed	Total
Liverpool	317	798	1,115
Penrith	705	856	1,560
Blacktown	998	1,550	2,548
Sub-total 3 LGAs	**2,020**	**3,203**	**5,223**
Other LGAs	1,012	7,591	8,603
Total SMA	**3,032**	**10,794**	**13,826**
WSEA Precincts			
Erskine Park (Penrith)	116	250	366
Eastern Creek (Blacktown)	332	230	562
WSEA Total	448	480	928
Source: ELDP			

2.2.1 Zoned and Undeveloped Land in WSEA

Of the 2,300 hectares of zoned and undeveloped land in SMA, about 900 hectares are located within the WSEA, and 448 hectares are in Erskine Park and Eastern Creek precincts within the WSEA. However, as noted above, the UDIA has argued that 25%-50% of zoned and undeveloped land is likely to be 'lost', which might reduce the 'undeveloped' supply from these two precincts to about 350 hectares.

At the same time, there has been a significant lift in planned projects in these two precincts. After averaging 22 hectares per annum in the period 2015-17, projects in the pipeline for 2018 and 2019 will take-up 151 hectares and 301 hectares respectively. These numbers include projects on land which needs to be rezoned redevelopment of already developed land but, regardless, highlight the extent of the turnaround in activity in the sector.

Table 3 - Projects Commenced and in the Pipeline

Planned Commencement	Eastern Creek	Erskine Park	Total Hectares
2015	16.9	1.2	18.1
2016	11.7	7.4	19.1
2017	5.2	23.4	28.6
2018	103.7	47.2	150.9
2019	22.5	279.0	301.5

Source: Cordell Connect. Note: projects include redevelopment of existing developed sites – hence data in this table does not tally with undeveloped land in Table 2.

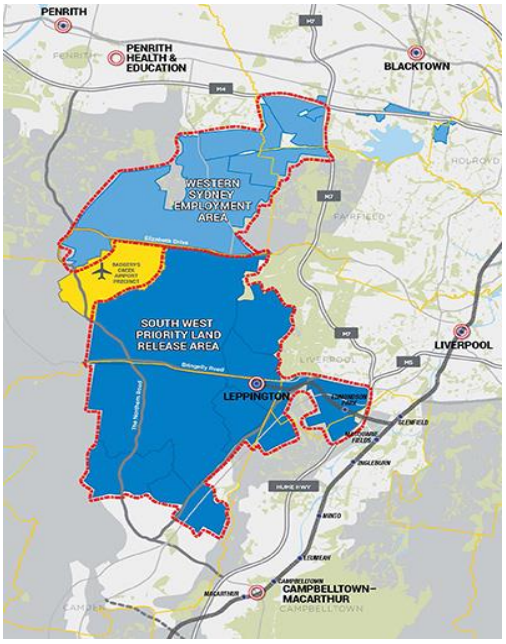
2.3 Proposed Extension of Employment Land

The need for the stock of employment land to be increased in the SMA was recognised by the State Government's draft Broader WSEA Structure Plan (2013) which was incorporated in the amended SEPP (2014). It proposed to re-zone 6,329 hectares of land from rural use to employment land in western Sydney. Of this proposed new employment land 4,655 hectares are extensions to the WSEA, called WSEA Extensions, in the Penrith and Liverpool LGAs.[6]

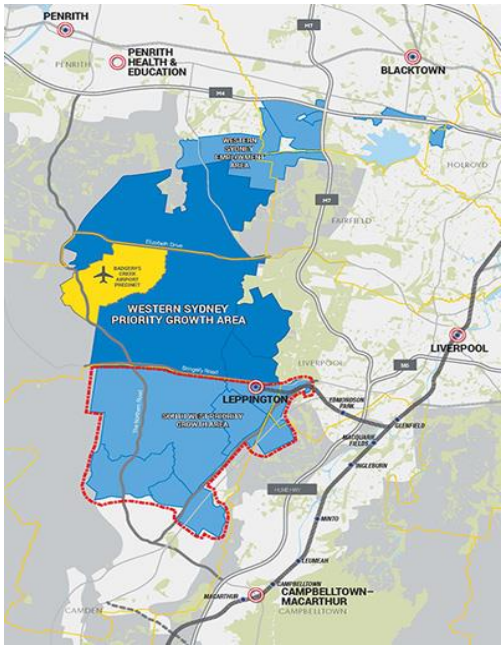
> *"In April 2014, the Commonwealth Government confirmed Sydney's second airport would be built at Badgerys Creek, near the Western Sydney Employment Area. This means we can expect the Western Sydney Employment Area to provide more than the 57,000 jobs we'd predicted over the next 30 years, and the 212,000 jobs we'd forecasted for the longer term."*
>
> ***Creating Jobs in Western Sydney - Amending the SEPP to Expand the WSEA, August 2014***

In October 2015, the NSW Government announced a broader investigation into opportunities for new jobs and homes around the planned Western Sydney Airport. The new **Western Sydney Priority Growth Area** (shown in the map below) will guide new infrastructure investment and identify new locations for residential, commercial, and industrial use. The necessary Land Use and Infrastructure Implementation Plan (LUIIP), which will outline servicing and development priorities for the WSPGA, is expected to be released in the latter half of 2018.

PREVIOUS BOUNDARIES



NEW BOUNDARIES



Source: DPE

[6] The balance of the 6,329 hectares is the 1,674 hectares of Commonwealth Government-owned land at Badgerys Creek airport.

2.4 Implications for the Subject Site at Kemps Creek

The supply of employment land in the SMA and in western Sydney appears to have shown little growth in the past decade. The UDIA's report suggests that a shortage is emerging which is supported by the sharp lift in land values. The Greater Sydney Commission (GSC) has also recognized the risk that the supply of zoned but undeveloped land, while seemingly large, is in practice insufficient. The recent surge in the pipeline of projects in the Erskine Park and Eastern Creek precincts also supports the UDIA argument that the supply of industrial land is simply inadequate. Judged against the ELDP benchmarks, the shortfall is of the order of 500-1,000 hectares.

With recent strong growth and projected strong growth in demand going forward, there is a substantial need for additional land to be zoned for industrial use in both the short and long-term, to meet both the shortfall but also projected growth in demand. As the GSC has stated, "the servicing of existing and new land zoned for industrial and urban services is therefore a priority to support the continued growth of the economy and local jobs." It has stated that "there is a need to provide a sufficient supply of industrial and urban services land … to keep downward pressure on land values."[7]

In the short-term (1-5 years), the strong economic conditions in the SMA economy (discussed below), suggest that the current level of up-take of employment land can continue to run at the 200-300 hectares per annum rate indicated by the UDIA. By way of comparison, the uptake in the slightly smaller Melbourne market has been consistently running at about 300 hectares per annum. If the shortfall of 500-1,000 hectares in undeveloped land, is added in, that points to desirably adding more like 300-400 hectares per annum in the next five years.

Given the current level of take-up, if an adequate amount of additional land is not rezoned, the scarcity premium which has emerged will only grow and continue to put upward pressure on industrial land prices. In addition, as discussed below, long-term growth in the SMA is also consistent with an up-take of 260 hectares per annum in the 10 years to 2026, and longer term to 2036.

Development of the land for warehouse and logistics purposes will go some way to meeting the need for industrial floorspace. In doing so, it will also support of the State Government's commitment to support the SMA's and western Sydney's competitive position by minimising upward pressure on the cost of employment land, and to supporting economic growth.

[7] GSC *A Metropolis of Three Cities* - the Greater Sydney Region Plan page 130
https://www.greater.sydney/metropolis-of-three-cities/introduction

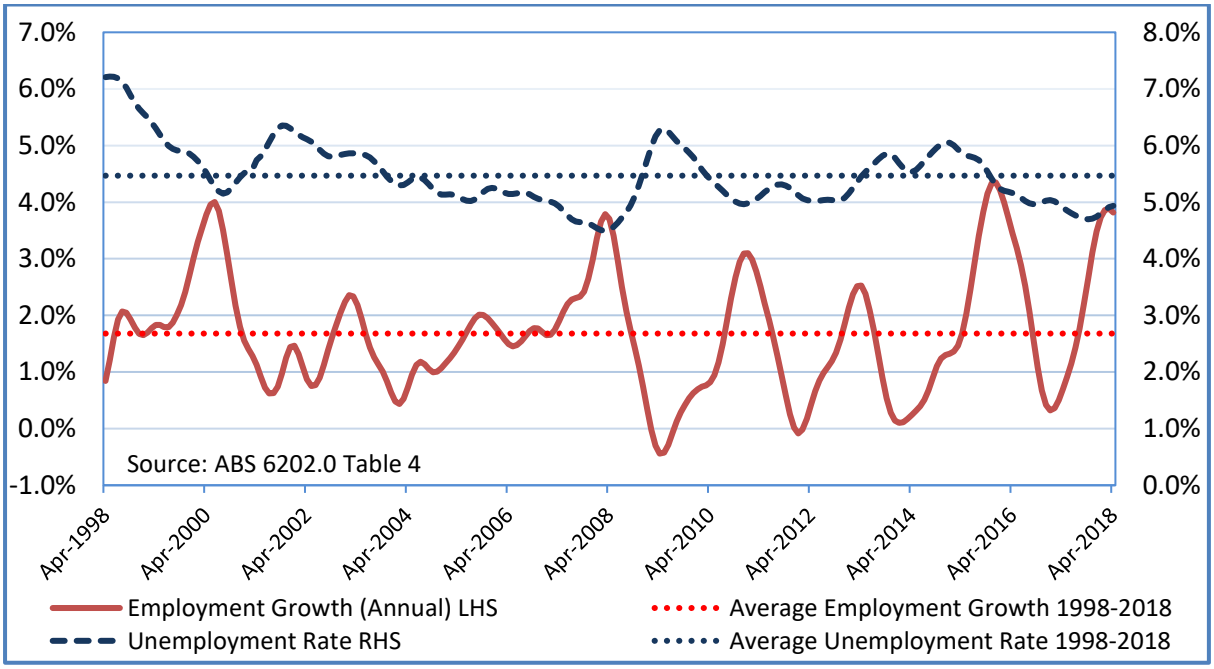
3 Sydney - Short and Long-Term Economic Growth

The NSW and Sydney Metropolitan Area (SMA) economies have experienced a strong period of economic growth 2012-17. There are some risks to the short-term outlook, but the general consensus is for more moderate but still positive growth over this period. From an investment perspective, the longer-term outlook is more significant. Projections are for the SMA's population and employment to grow 37% and 33% respectively in the period 2016-36. With real incomes growing 32%, the size of the SMA economy will grow by about 84%, which will underpin growth in demand across all sectors.

3.1 The Short-Term Outlook

The NSW economy has enjoyed a strong period of growth in the five-year period 2012-17. Reflecting that strong performance, employment growth has accelerated to 3.8%, well above its 20-year trend average of 1.7%. The unemployment rate in NSW has fallen to 4.9%, below its average of 5.5% and marginally above its 40-year low point in 2008 of 4.5%.

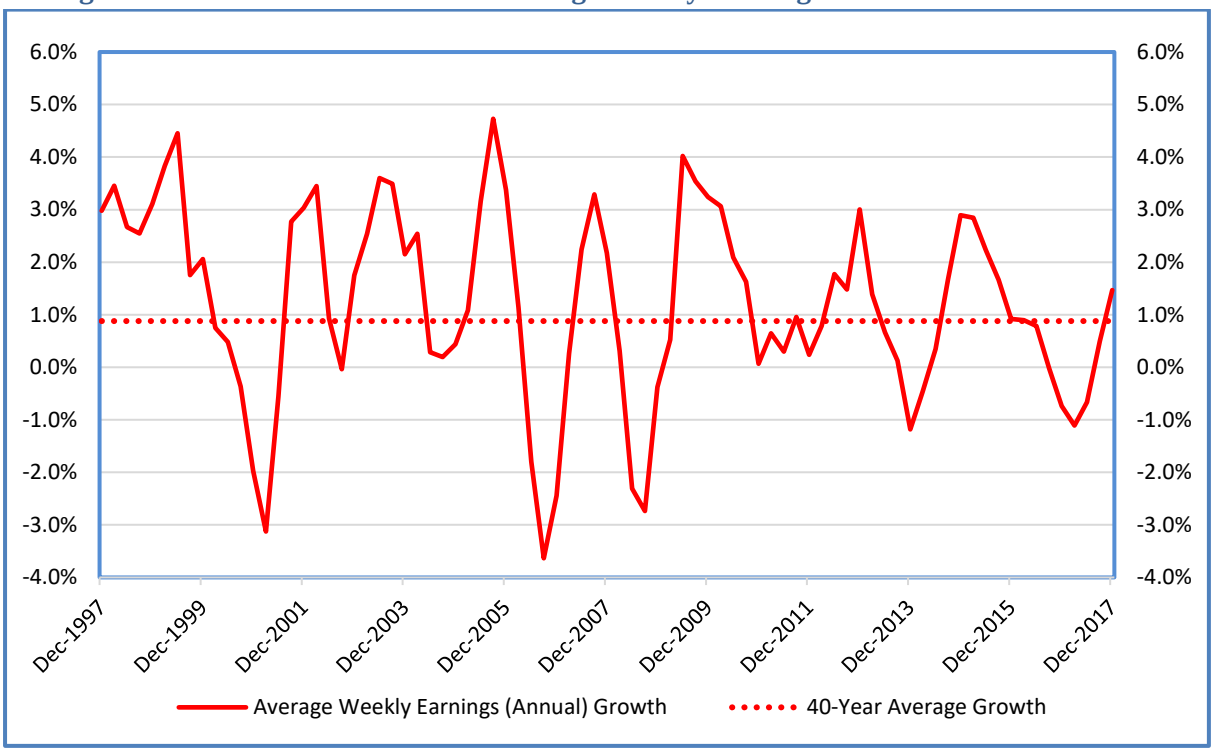
Figure 4 NSW Patterns of Employment Growth



Underpinning these strong employment conditions have been a number of factors, including strong growth in public infrastructure investment and a cyclical upswing in housing activity, the latter buoyed by cuts to interest rates in the period 2011-16. There is a solid pipeline of transport infrastructure projects set to sustain the level of activity in public investment spending in the medium term. Conversely, approvals numbers for dwellings, particularly high-rise units, have fallen and, with a lag, this will see a moderation in housing activity. While, bearing in mind the cyclicality in employment growth, a period of slower growth seems highly probable, the ingredients for a sharper slowdown are not compelling.

The one moderating influence has been the slow growth in real incomes in 2015-2016 (see Figure 5 below). However, while the national numbers are still feeling the effects of the post-Resources boom slowdown, the latest figures for NSW indicate a return to growth, with annual growth in the year to December 2017 coming in at a very respectable 1.5% p.a., which is above the long-term trend of 0.9%. This is in part the lag effect of the sustained strength in labour market conditions.

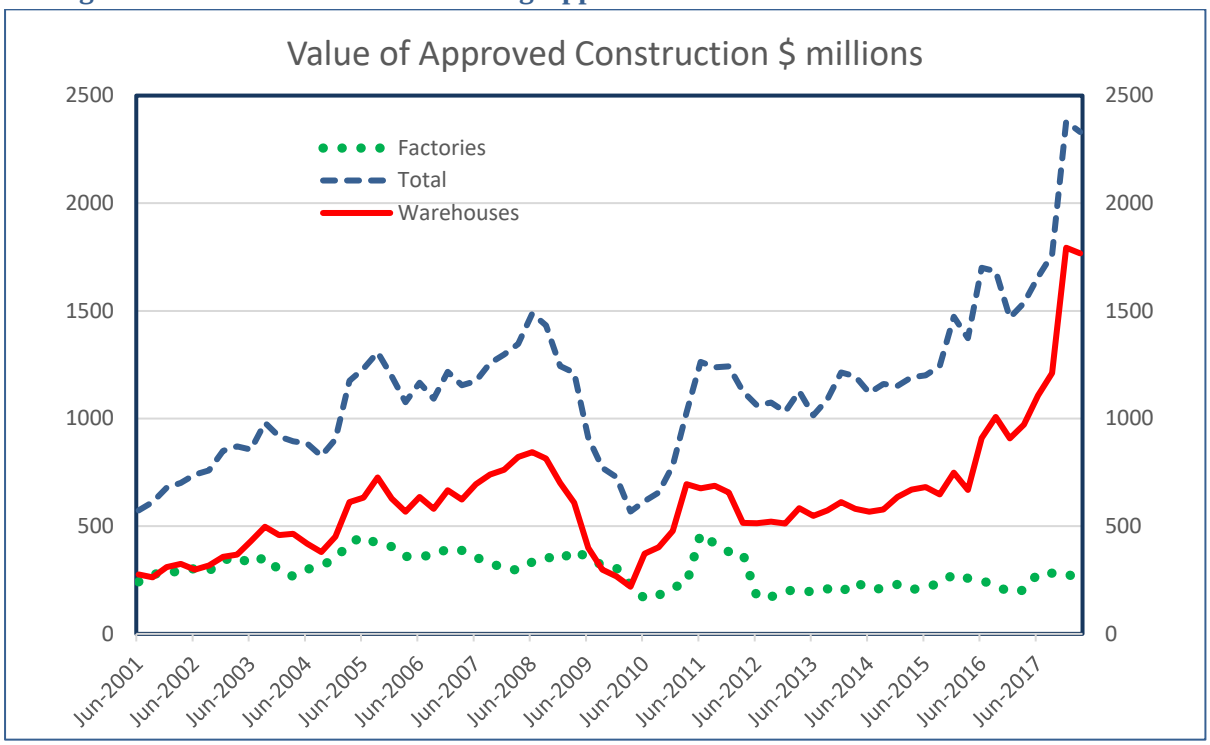
Figure 5 NSW – Growth in Real Average Weekly Earnings



3.1.1 Industrial Activity

The strength of the NSW and Sydney economies, and the increase in demand it has generated, has caused business investment to lift. One element has been in industrial activity. Approvals for the construction of new warehouses has surged after a period of weakness in the period 2012-15. This surge in approvals ties in with the sharp lift in proposals for development of industrial land in Eastern Creek and Erskine Park cited earlier.

Figure 6 NSW – Industrial Building Approvals 2001-2018



3.2 The Long-Term Outlook

3.2.1 The Population Projections for Sydney 2016-2036

The current Department of Planning and Environment (DPE) projections (see Table below) have Sydney's population rising from 4.7 million in 2016 to 5.5 million in 2026 and 6.4 million in 2036, averaging growth of 1.7% per annum in the period 2016-2026 and 1.5% in the period 2026-36. This compares with growth of 1.0% in 1996-2006 and 1.7% in 2006-16. Projections for employment growth are marginally lower, reflecting the impact of an aging population profile.

Table 4 DPE Population and Employment Projections for SMA 2016-36

No. million/ Average annual Growth (%)	2016	2021	2026	2031	2036
Department of Planning and Environment Projections (2016)					
Population (millions)	4.68	5.11	5.54	5.98	6.42
		1.75 %	1.64 %	1.53 %	1.45 %
Employment (millions)	2.44	2.64	2.84	3.04	3.24
		1.59 %	1.47 %	1.37 %	1.31 %
Source: DPE (2016) Population Projections					

Underpinning the SMA's growth potential – and perhaps implicit in the DPE projections[8] - is the significant volume of new transport infrastructure currently under construction in the SMA. This has positive implications for Sydney's short-term growth due to the employment it creates but also, more importantly, it has large positive implications for the economy's medium and long-term growth potential. Transport infrastructure, in effect, creates space in a city which then allows opportunity for more housing and industry, and hence a higher demographic/economic growth trajectory. Also, the increase in space moderates upward pressure on housing costs.

Compared with recent history, the amount of transport infrastructure in the pipeline at present is significant and transformative in its scale.[9] Then there is the new Western Sydney Airport (WSA) which, inter alia, will lift the potential freight and foreign tourist inflows into the Sydney market, and will lift the growth potential of the outer western areas of Sydney. In the absence of investment in transport infrastructure, growth would be choked off by congestion, which has been a factor explaining the combination in the past of low growth and upward pressure on house prices in the Sydney market.

3.3 Long-term Projections: Economic Growth in SMA Economy 2016-36

The long-term economic and demographic outlooks are heavily intertwined. Both external and domestic demand factors are typically important in any short-term prognosis.

However, while expectations for expansion of the Asian economies are a critical assumption for long-term demand for Australian exports, the key to long-term projections of the economic output and income growth that the NSW and Sydney economies will generate, is primarily a function of three things:

- growth in population,
- changes in participation (proportion of population working), and
- productivity.

Projections for the SMA's population growth have the population aging in the period 2016-36. The 15-64 age group – the prime working age population – is expected to decline as a share of the population from 68% in 2016 to 64.5% in 2036. Reflecting this, population growth of 1.6% is expected to translate to a lower 1.3% per annum growth in the workforce.

[8] Department of Planning and Environment is not explicit on the assumptions made in arriving at its projections. It is explicit about net migration and birth/mortality assumptions, but not other assumptions.

[9] In aggregate, public infrastructure investment in New South Wales in 2017/18 is running at equivalent to 2.4% of Gross State Product. This compares with average levels of 1.6% over the previous 10 years and 1.4% over the longer term. The scale of new transport infrastructure projects committed to, indicates that this historically high level of capital investment will continue over the next 4-5 years in Sydney.

Table 5 - Projections of Real Gross Regional Product /Income for Sydney (2016-36)

$ 2015/16 prices	2016	2036	% change per annum 2016-36
GRP $bn	376	692	3.1%
GRP per worker $'000	154	208	1.5%
GRP per capita $'000	80	106	1.4%

The SMA economy is presently operating at close to full capacity, with the unemployment rate below 5% and the growth projections assume that over the long term the economy will continue to operate at close to full capacity.

Over the period 2016-36, MacroPlan's estimates will have SMA's Gross Regional Product (GRP) rise from $376 billion to $692 billion, lifting real income per capita from $80,000 to $106,000, or 32% (see Table 5 above).

In the SMA economy, in the period 1996-2016, household incomes grew at an average 2.1% per annum in real terms, which represents a very substantial rise. This magnitude of rise reflected factors other than productivity, with rising workforce participation rates and declining unemployment both lifting incomes in this period (from still post-1991 recessionary levels in 1996).

In the period ahead, the decline in the relative size of the working age cohort, will make productivity even more significant for there to be growth in real incomes. That is, productivity growth of the order of 1.5% would be expected to lift real incomes by 1.3-1.4% per annum. This is more modest growth than the 2.1% experienced in the previous 20 years but, in conjunction with population-driven demand, will still underpin solid growth in demand in the SMA economy.

3.4 Implications for Demand for Industrial Space

The period of strong short-term growth has grown the market being served by the logistics industry, evidenced by the large pick-up in approvals for new warehouses. This strong period of growth has seen the uptake of employment land lift to 200-300 hectares per annum and, as discussed in Section 2, put significant upward pressure on the price of employment land. There is some cyclical element to this with concurrent high level of housing activity which peaked in 2017. The prospect of a period of slower housing activity raises the risk of a period of slower growth on the short-term horizon.

More important, however, is the longer-term prognosis which is for the Sydney/NSW economy to grow strongly in the period to 2036. In terms of population and employment, the size of the market will be 37% and 33% respectively larger in 2036. In addition, higher incomes will mean demand for goods and services will be 84% larger. Consistent with long-term trends, the services sector growth will likely grow relatively faster, with services sector output roughly doubling, while the volume of goods traded in the market will expand by close to 50%.[10]

[10] The ABS measure of volume will rise by over 60%, but this includes a quality-adjustment factor which for example has the volume of cars (imported) rising faster than the number of cars.

4 Growth in WSEA Demand for Employment Land

In this section, we look at projected growth in jobs, as a driver of demand for employment land, in the WSEA LGAs of Blacktown, Liverpool and Penrith (the 3 LGAs). More specifically we look at projected growth in jobs in sectors manufacturing, wholesale and transport and warehousing (MWT) which are the major users of large-scale industrial land.

4.1 Projected Growth in Total Jobs

In 2016, 10.9% of total jobs in the SMA were located in the WSEA LGAs of Blacktown, Liverpool and Penrith.

In the period 2016-36, total jobs in the SMA are projected by the Bureau of Transport Statistics (BTS) to grow by 32% or 782,000, from 2.46 million to 3.24 million. Growth in the 3 LGAs is projected to be significantly faster, with jobs growing by 0.16 million or 60% from 0.27 million to 0.43 million.

The faster jobs growth in the 3 LGAs reflects the higher projected growth in population in the 3 LGAs, with population in these LGAs projected to rise by 46%. There is potential for population growth to be higher in these three LGAs, which would underpin higher jobs growth in the area.

Table 6 DPE Population Growth Projections for the Three LGAs

						Growth (000's) in period 2016-36	
LGA	2016	2021	2026	2031	2036	Change no.	% Change
Blacktown	349.1	387.2	433.5	475.8	521.5	172.4	49%
Liverpool	214.1	241.9	274.8	301.1	331.0	116.9	55%
Penrith	205.2	221.6	237.5	253.6	270.8	65.6	32%
Total	**768.3**	**850.7**	**945.8**	**1030.5**	**1123.2**	**354.9**	**46%**

4.2 Projected Growth in Industrial Jobs

The other aspect to jobs growth in the 3 LGAs is the long-term shift in manufacturing, wholesale, and transport (MWT) from inner Sydney locations to outer locations with proximity to motorway networks and offering space for larger scale operations. The MWT sectors in these three LGAs accounted for 15.7% of jobs and by 2036, reflecting the shift of these jobs to the outer areas, the share is projected to rise to 20%. It will account for 43% of the jobs growth in these sectors.

In number terms, there were 73,455 employed in the MWT sectors in the three LGAs in 2016. In the period to 2036, this number is projected to rise by 37,567 or 51% to 111,022 workers.

Table 7 BTS Employment Projections 2016-36 - Blacktown, Liverpool & Penrith

No.'000		Manufactur-ing	Wholesale Trade	Transport, Postal & Warehousing	MWT Sub-total	All Sectors Total
SMA	2016	200.7	131.2	136.8	468.7	2462.2
	2036	216.9	159.9	179.5	556.3	3244.6
	No. Change 2016-36	16.2	28.8	42.7	87.7	782.4
	% Growth 2016-36	8.1%	21.9%	31.2%	18.7%	31.8%
3 WSEA LGAs	2016	36.1	16.5	20.9	73.5	268.1
	2036	41.6	27.8	41.7	111.1	427.9
	No. Change 2016-36	5.5	11.3	20.8	37.6	159.8
	% Growth 2016-36	15.2%	68.5%	99.5%	51.2%	59.6%
	% Share of Total Growth	34.0%	39.2%	48.7%	42.9%	20.4%

MWT = sum of the three sectors – manufacturing, wholesale, and transport/warehousing. Three WSEA LGAs are Blacktown, Liverpool and Penrith.

4.3 Implications for Kemps Creek

The BTS projections reflect a continuation of long-term trends. In particular, they reflect the shift in 'industrial' employment out from inner urban areas to the western Sydney. Since the projections were made, the commitment by the Federal and State Government to the new WSA airport, and the decisions to commit to new transport infrastructure linking the new airport to the broader SMA market, have seen the State Government recognising the potential for higher growth in both population and employment in the area around the WSA.

That is the projected growth in employment the three WSEA LGAs is likely to be higher, and the shift in manufacturing, wholesale trade and transport & warehousing is likely to be more pronounced.

In terms of demand for employment land in western Sydney, the highlight is the relatively faster growth in transport and warehousing, and wholesale, compared with manufacturing. Employment in transport and warehousing is projected to double, with potential upside.

For the subject site, which is proposed to develop warehouses, these long-term projections indicate that demand for warehouse developments in this locality, will be strong over the medium and long-term.

5 Transport Infrastructure - Outer Western Sydney

As stated earlier in this report, significant investment in new transport infrastructure is either under way, or is planned to ocur, which will improve overall efficiency and competitiveness of western Sydney as a location for manufacturing, wholesale, and logistics. It will increase the SMA's capacity and hence growth potential but will also cause growth to be increasingly directed to the outer (western) areas of Sydney. A list of all projects is set out in the Appendices.

5.1 Enfield and Moorebank Intermodal Terminals

Port Botany's total container volumes grew from approximately 1 million TEUs in financial year 2002 to approximately 2.6 million TEUs in 2017. Of that about 0.45 million or 15% was moved by rail and 85% by road. The NSW Ports MasterPlan forecasts container volumes to rise to 3.8-4.0 million TEUs in the next 10 years, and towards 7.5-8.5 million TEUs by 2045.

The NSW Freight and Ports Strategy has set a target to move 3 million TEUs, or up to 40%, by rail by 2045.[11] The Moorebank Intermodal is projected to take about 1 million TEUs, which will lift the total capacity of IMTs to about 1.6 million TEUs. In the short-term, this could take upwards of 50% of total Port Botany throughput (2.6 million in 2017) but given the projected growth towards 4 million TEUs over the next 10 years, additional IMT capacity will be needed. the MasterPlan has identified the Western Sydney intermodal terminal (IMT) as the next major freight terminal (see below).

In 2014, a new Enfield IMT opened and in late 2018 or 2019, the much larger Moorebank IMT hub is expected to start operation. When operational, the Sydney Ports Corporation is projecting that the Moorebank IMT will take a significant share of the freight coming through Port Botany. It will take significant market share from existing IMTs (Yennora, Villawood, and Chullora) which are capacity constrained and not (as) near the motorway network, making them less competitive locations for servicing the SMA market. The shift in volumes to Moorebank IMT will also reduce road freight movements through inner western Sydney.

This outcome means that inner Sydney locations will become much less valuable for industrial uses. With residential emerging as highest-best use for inner SMA locations, this will accentuate the long-term shift of manufacturing, wholesale and logistics firms to outer western Sydney and sites with more space and locations proximate to the motorway network and the freight network.

As freight movements (presented as TEUs) more than double at Port Botany by 2025, this outcome will greatly reduce freight traffic along key arterial roads. In the short term, road freight will continue as the main mode for distribution and logistics of containerised goods. This will continue to support demand for warehouse space and distribution facilities at locations within proximity to the M4/M7 and M5/M7 Sydney Orbital intersections and in the Erskine Park employment precinct.

[11] Transport for NSW (November 2013) NSW Freight and Ports Strategy, p31

Although a long-term proposition, the Outer Sydney Orbital Road (M9) will reinforce the connection between South and North West Sydney (as well as to other eastern seaboard markets).

5.2 Western Sydney Airport/WSEA Intermodal Terminal

With the completion of the Enfield and Moorebank Intermodal Terminals, the next phase of the NSW Freight and Ports Strategy is for an intermodal which serves the WSEA and new WSA. Given the space available for such an IMT, it has the potential to have significantly larger capacity than other IMTs, including the Moorebank IMT.

To date, this has involved preliminary work identifying and preserving land for an intermodal terminal in proximity to the WSEA, and a rail freight corridor for a proposed Western Sydney Freight Line to this new terminal. With planning on the new WSA now accelerated, this has the potential to bring forward planning and work on this IMT.

5.3 New Road Infrastructure

There are significant amounts of new transport infrastructure being developed for in the pipeline which will increase the connectivity and competitiveness of the WSEA/WSA area for industry.

In the near term, a significant upgrade is proposed to Mamre Road which connects the M4 to Elizabeth Drive which itself will be duplicated by the new M12 connecting the M7 and The Northern Road/future M9 via to the WSA airport.

The plans for Mamre Road include intersections, with a major intersection proposed at Bakers Lane, which will give the subject site a very high level of connectivity.

5.4 New Rail Infrastructure

In addition to the road infrastructure, significant investment in new freight lines will enhance the competitiveness of the WSEA area in the medium and long-term. The current work on duplication of the final section of the Port Botany freight line will increase the ease of moving freight out of inner Sydney. The Southern Sydney freight line (SSFL) will directly improve rail capacity out of Port Botany and the competitiveness of e.g. Moorebank IMT, with indirect benefit to WSEA. However, the next round of rail investment which will more directly lift the competitiveness of WSEA – that involves the Western Sydney Freight Line (WSFL) into WSEA and at a later stage the Outer Orbital Freight Line (OOFL).

Both the WSFL and OOFL are linked to the new WSA airport, and its growth will increase the case for these projects. It should also be noted that the Maldon-Dombarton Freight Link (MDFL), which will connect Port Kembla to south-western and western Sydney, again adding to the relative competitiveness of WSEA.

6 Conclusions

The long-term gravitation of industrial users towards outer western Sydney locations, owing to proximity to the arterial road network and relative cheaper rents, has become stronger in recent years. The pressure for urban regeneration in inner urban areas has also been a factor reinforcing that movement. The State Government's significant investment in transport infrastructure, which will significantly increase the connectivity of the outer western areas, including the WSEA and the adjacent new WSA airport at Badgerys Creek, will further accentuate the shift of industrial users to these areas.

The recent strong performance of the Sydney/NSW economy has seen strong take-up of space.

With no significant additions to the supply of zoned employment land in the SMA market, and in outer western Sydney, in the past decade, the UDIA has highlighted the potential for shortages. Industry market reports now point to upward pressure on prices emerging as the shortage of employment land is becoming a reality. This threatens to stymie growth in the near-term time horizon. The GSC has acknowledged this threat to growth and supported the need for additional supply of employment land to address the emerging shortage.

Longer term, the argument for a substantial increase in the supply of employment land in the WSEA area, is also a compelling one. In the period 2016-36, official BTS projections are for employment in manufacturing, wholesale and transport and warehousing sectors – the principal users of industrial land - in three WSEA LGAs to rise by 42%. These projections will translate to a similar order of magnitude increase in demand for employment land.

Given the go-ahead to the new WSA, and the substantial investment in transport infrastructure to support economic activity, the competitiveness of western Sydney (and the subject site) as a location for the logistics sector is being significantly enhanced. This means there is upside potential to these growth and demand projections. This makes the need to re-zone additional land for industrial uses a compelling one.

The 2013 decision by the State Government to flag the re-zoning of an additional of 4,655 hectares of land for employment uses to expand the WSEA, was recognition of the future demand and of the potential for supply constraints to emerge.

The location of the subject site at the proposed Bakers Lane intersection on the (to be) upgraded Mamre Road, and located within the proposed WSEA extension area, means that it is ideally located for development as a warehouse and logistics facility. The subject site will be co-located with established industrial property to the north (Mamre West) and east (Erskine Park), with leverage from the amenity provided. On the basis of these attributes, the subject site is well-suited to its intended use for large scale warehousing and logistics purposes.

In short, from both a short-term and long-term perspective, both demand and supply factors make a compelling case for the development of the subject site. It will have a significant positive economic impact, both directly in terms of jobs and economic activity created and also in mitigating market pressures and enhancing the competitiveness of the SMA and western Sydney economies.

7 Appendices

7.1 Appendix 1: Historical Trends in Land Markets in Cities

7.1.1 Broad Trends in Distribution of Industry and Population in Modern Cities

One of the most significant trends that have emerged in the past three decades has been the gentrification of inner industrial areas, a phenomenon observed in many cities in the world[12]. In 1960, when the manufacturing share of economic activity reached its peak in Australia (and in US and rest of developed world), a significant proportion of manufacturing – and associated wholesale and logistics industries - was located in the old, inner areas of Australian cities near the main port and rail facilities.

However, two trends changed that. One was the globalisation of manufacturing which has seen manufacturing decline significantly in Australia. At the same time, within cities, manufacturing, logistics and wholesaling has moved to outer areas[13] where more space could accommodate their needs. Largely, the industrial workforce has followed the factories and warehouses to the outer areas. These industries are also drawn by the better transport infrastructure in outer areas, with modern motorway networks offering better connectivity to customers, compared with congested inner-city roads.

In Sydney's case, the motorway network provided by the M4, M7, M2, M5, coupled with rail freight from Port Botany to inter-modal terminals in outer Sydney, has been a significant pull factor. The investment in the new WestConnex and NorthConnex motorways will add to the connectivity of the outer Sydney road network. In addition, the commitment to the new WSA with its associated motorways (M12, M9) and freight links, are likely to accentuate this outward trend.

Meantime, with the rise in service sectors as a share of the economy, the agglomeration economies offered by CBDs have become more potent as factor in attracting the financial and information services sector. With the CBD increasing its share of jobs, inner city locations and locations on the rail networks have become more valued as choices for residential living, providing proximity and/or access for CBD-based workers. As we note elsewhere, the high frequency and fast service to be offered by the Sydney Metro and Sydney-West Metro will provide high connectivity to the CBD and make their corridors attractive for residential living. These forces are making these inner-city areas too expensive for industrial uses, thereby compounding the outward movement of industry.

7.1.2 Growth and the Pressures It Creates

As the population of cities grow, demand for additional space is accommodated by cities expanding at the urban edge and becoming denser in the inner and middle areas, in particular in locations along rail networks which have good connectivity. The increased density is a response to the increased value of land, as commuting times from the urban fringe and from locations which lack proximity to rail

[12] *Glaeser, Kolko and Saiz (2000)*
[13] *Frost and Dingle (1995)*

network, rise. The higher value of the land encourages it to be used more efficiently (i.e. more densely).

Cities are, however, highly regulated, with zoning and other development controls (i.e. height & density) constraining the capacity of "the market" to respond to growth and peoples' actual preferences. The regulatory constraints are within the province of government but also reflect the preferences of the incumbent population which might not wish to accommodate change required to meet the demand of outsiders wishing to live in their area. The international experience suggests that in high income/ high amenity cities, and notably coastal cities – such as San Francisco (US), Vancouver (Canada), and Australian cities – resistance to change is a significant factor constraining supply.

Resistance to change generally tends to be stronger where the pressure is for the conversion of established low density residential areas to high density residential. One exception to this is along main roads where increased traffic volumes has reduced the amenity of living in these traffic corridors.

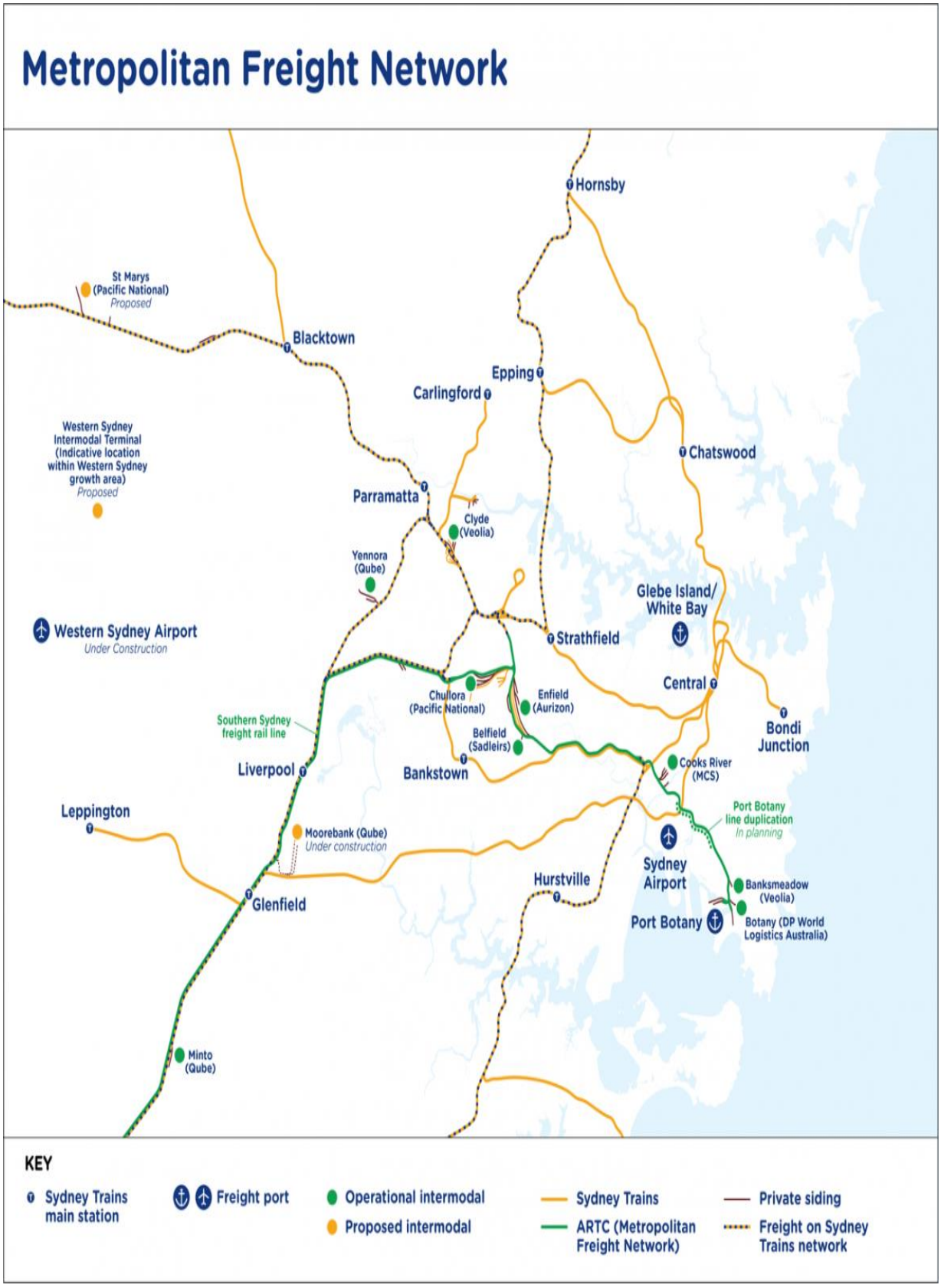
Another, exception is in areas with industrial land. The conversion of industrial land to high density residential purposes can more likely increase the amenity of an area. A trend in cities has been for manufacturing to move out of inner and middle areas to outer areas which offer more space. This has created vacant old industrial land which has accommodated a significant amount of the growth in high density residential.

7.2 Appendix 2: SMA Current and Future Transport Infrastructure Projects

Major Road Projects	Status	Comment
Mamre Road Upgrade	Planning commenced. Completion 0-5 years.	10-kilometre section from M4 to Kerrs Road where interchange with M12 will be built. The plan includes an interchange at Bakers Lane. Four lanes, with wide centre median allowing expansion to six lanes.
Bringelly Road Upgrade – Stage 2	Under Construction	Connection M7 to The Northern Road/M9 south of WSA at Leppington
NorthConnex	Under Construction	Via M7/M2, this will short trip time to M1, northern exit from Sydney at Wahroonga.
Northern Road Upgrade	Under Construction	Will improve Penrith-WSA-Leppington-Narellan- Campbelltown corridor prior to M9
WestConnex Stage 1–3	Under Construction	Via the M4, this will shorten travel times to inner Sydney and Sydney Airport
M12 (Elizabeth Drive) Connector M7 to WSA and M9/Northern Road	0-10-year timetable.	Increase connectivity between M7 and Northern Road/M9 and WSA Airport. Mamre Road will connect to both M4 and M12
M9 (Outer Sydney Orbital)	10-20-year timetable	Increase road connectivity south to Narellan/Campbelltown/M31 and north to North/Northwest Sydney. New exit point from Sydney onto M1, near Berowra and north of Wahroonga exit.
M5 West Upgrade	0-10-year timetable.	Increase road capacity Liverpool/MIM to Port Botany
M5 Extension to M9	20+ year timetable	Increase connectivity of South-West Sydney
Freight Rail Projects		
Moorebank Intermodal (MIM)	Completion 2018/2019	An intermodal freight hub with good connectivity to WSA/WSEA via M7, and substantial capacity. Existing intermodals at Yennora, Villawood and Chullora are space/capacity constrained and not near motorway network.
Port Botany Rail Line Duplication	Under Construction	Completion of duplication of the final 3kms of single line track will increase ease of movement of freight from Port Botany to SSFL and intermodal hubs.
Western Sydney Freight Line (WSFL)	10-20-year timetable. High probability.	Connecting WSA/WSEA to Port Botany and to Port Kembla via Southern Sydney Freight Line and Maldon-Dombarton Freight Line. Includes Western Sydney Fuel Pipeline
WSA/WSEA Intermodal	10-20-year timetable.	A major intermodal at WSEA/WSA on WSFL would enhance connectivity of WSEA/WSA as logistical hub for SMA.
Southern Sydney Freight Line (SSFL)	0-10-year timetable.	Additional Capacity to support growth in freight volumes.
Outer Orbital Freight Line (OOFL)	10-20-year timetable.	In parallel with M9 motorway, would enhance competitiveness of WSEA/WSA intermodal.
Maldon-Dombarton Freight Rail Link	10-20-year timetable.	Connecting Port Kembla to Southern Sydney Freight Line; will connect WSA/WSEA to Port Kembla. Will enhance prospects for major intermodal at WSA/WSEA.

Metropolitan Rail Transfer Station	0-10 year	An Intermodal terminal to handle bulk waste and recycling materials originating in SMA. Location not specified but, subject to WSFL, WSEA would be logical long-term choice. OOFL would add to that.
Passenger Rail/Metro Network		
Sydney Metro - Northwest, City and Southwest (Bankstown)	Under construction	Improves connectivity of Northwest and Bankstown and lifts capacity of whole metro rail network.
Sydney Metro Extension Bankstown – Liverpool	10-20 year	Enhances worker/residents connectivity to SMA
Outer North-South Rail	10-20 year	Increase rail connectivity south to Narellan/Campbelltown and north to North/Northwest Sydney
Extended SW Line (T2/T5)	10-20 year	Increase rail connectivity to CBD. Reduce commute time to CBD from 90-120 minutes by 20 minutes, to under 100 minutes
Sydney West Metro CBD-Westmead	0-10 year	Improves connectivity of Parramatta to CBD
High Speed Metro WSA- Sydney West Metro at Westmead	**20-year +**	Reduce travel times to Parramatta and CBD. Commute time to CBD potentially cut under 50 minutes.
Expansion of Passenger Rail/Metro network enhances region's liveability for workforce and competitiveness of industry in the region.		

https://www.nsw.gov.au/improving-nsw/projects-and-initiatives/nsw-state-infrastructure-strategy/
https://future.transport.nsw.gov.au/
http://www.micl.com.au/the-project-1/


Metropolitan Freight Network
Hornsby
St Marys
(Pacific National)
Proposed
Blacktown
Epping
Carlingford
Western Sydney
Intermodal Terminal
(Indicative location
within Western Sydney
growth area)
Proposed
Chatswood
Parramatta
Clyde
(Veolia)
Yennora
(Qube)
Glebe Island/
White Bay
Western Sydney Airport
Under Construction
Strathfield
Central
Chullora
(Pacific National)
Enfield
(Aurizon)
Southern Sydney
freight rail line
Bondi
Junction
Belfield
(Sadleirs)
Liverpool
Bankstown
Cooks River
(MCS)
Leppington
Port Botany
line duplication
In planning
Moorebank (Qube)
Under construction
Sydney
Airport
Hurstville
Banksmeadow
(Veolia)
Glenfield
Port Botany
Botany (DP World
Logistics Australia)
Minto
(Qube)
KEY
Sydney Trains
main station
Freight port
Operational intermodal
Proposed intermodal
Sydney Trains
ARTC (Metropolitan
Freight Network)
Private siding
Freight on Sydney
Trains network

7.3 Appendix 3: Potential Future Employment Land

Potential Future Employment Land is land which has been identified in endorsed NSW Government or council documents (e.g. Plan for Growing Sydney, Growth Centre Structure Plans) as future or potential Employment Lands. These areas are subject to further investigations at the precinct planning stage to assess suitability for development. This will consider constraints such as riparian corridors, slope, vegetation, transport corridors, local roads and lot fragmentation.

Table 8 Potential Future Employment Land as at January 2017

Precinct	LGA	Area (Ha)
Catherine Fields	Camden	73.2
Future Industrial	Camden	87.6
Future Industrial	Liverpool	1,124.9
Kemps Creek	Liverpool	446.8
Lowes Creek	Camden	87.7
Lowes Creek/Marylands	Camden	63.7
Marylands	Camden	25.5
Rossmore	Liverpool	40.2
Moorebank Defence Lands	Liverpool	154.0
Glen Lee	Campbelltown	45.4
Glen Lee	Camden	14.6
Western Sydney Employment Area Extension	Penrith	4,098.5
Western Sydney Employment Area Extension	Liverpool	391.9
Greater Sydney Total		6,654

7.4 Appendix 4: Quantifying the Supply-Demand Gap

7.4.1 The Demand Position in NSW 2018

The NSW economy is currently performing strongly. The focus has been on public infrastructure (driving engineering construction) and the residential boom, as the two drivers of economic activity. The residential boom is now clearly slowing, which is likely to moderate demand/activity growth, but public infrastructure spending is set to remain at high levels.

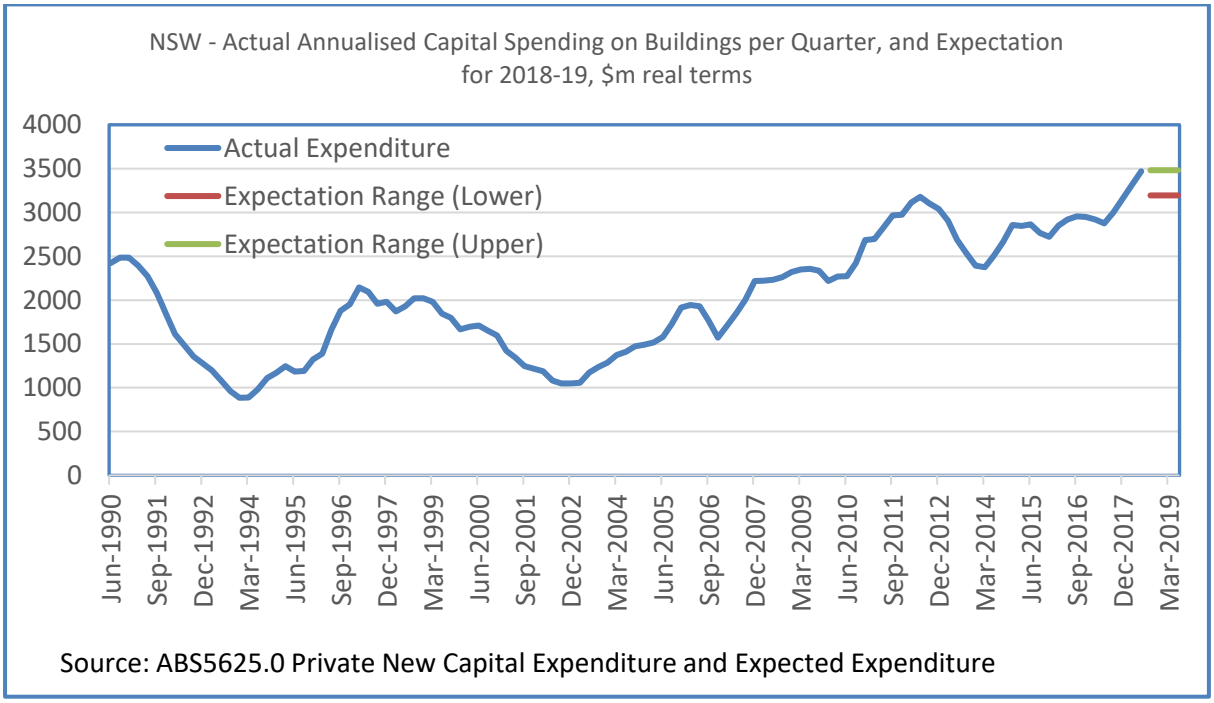
The broad strength of spending is reflected in strong levels of business capital spending on non-residential buildings and structures (eg, office, retail, warehouses) and high expectations going into 2019. The impact of the slowing in residential activity may moderate these expectations.

If we look at Chart 1, it shows the long-term upward trend in actual capital spending on new buildings and structures (in real terms), which reflects the trend growth in the size of the economy (larger population and higher spending per capita) and the need for higher levels of capital spending in a larger economy. It also shows that capital spending in the period 2015-17 was running at 12% above the average level for 2008-14. It also indicates that the current level of spending and the expectations for capital spending in 2018-19 are running at 30% above the levels in 2008-14.

While Chart 1 relates to all buildings, approvals data for warehouses (in real terms) in Chart 2 indicate that these trends are running more strongly than the overall trend. While overall non-residential approvals for industrial buildings in 2015-17 are up 32% on the 2008-14 level, approvals for warehouses are up 52%. And the level in 2017-18 is running at 125% above the 2008-14 level for warehouses. This has overall industrial building approvals at 65% above the 2008-14 levels.

Chart 3 shows the level of warehouse approvals in both Sydney overall and in the WSEA employment area and highlights the rising share taken by the WSEA.

Chart 1 – The Rise in Demand for Industrial and Commercial Buildings



Source: ABS5625.0 Private New Capital Expenditure and Expected Expenditure

Chart 2 – The Rise in Warehouse Approvals[14]

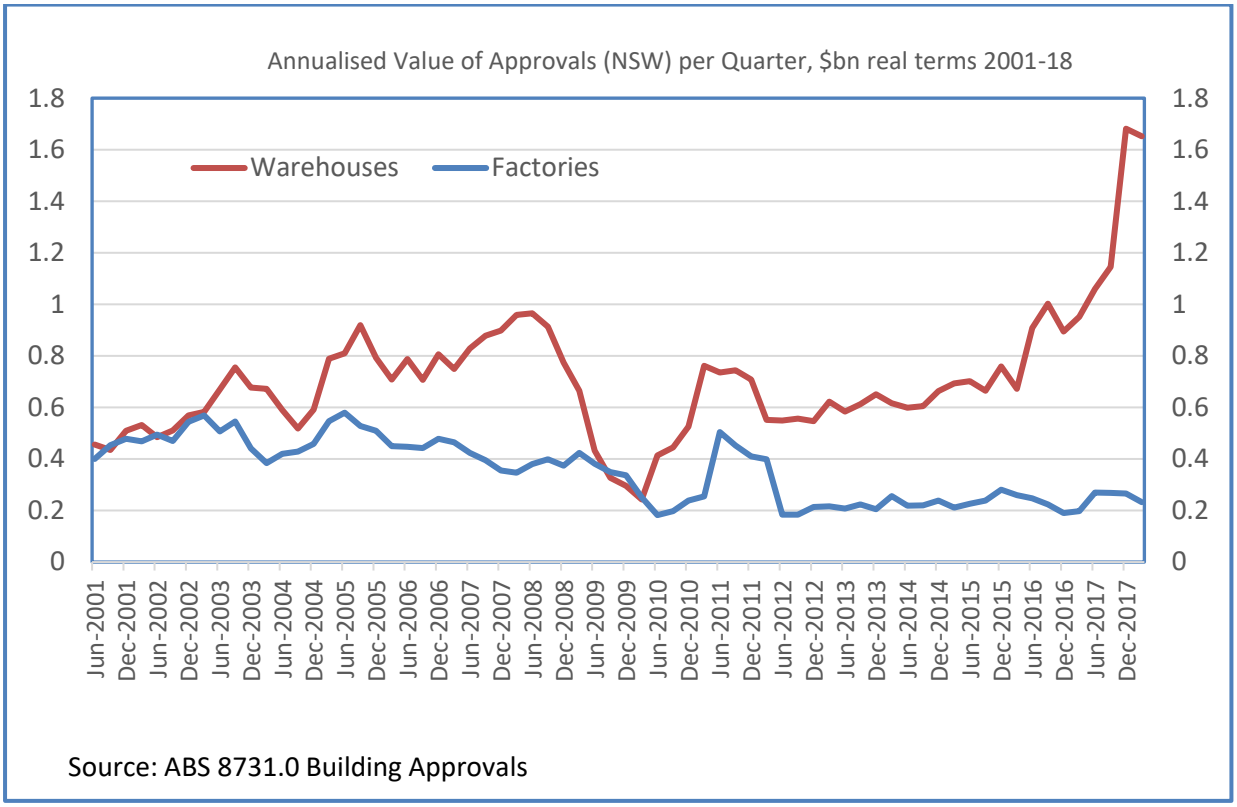
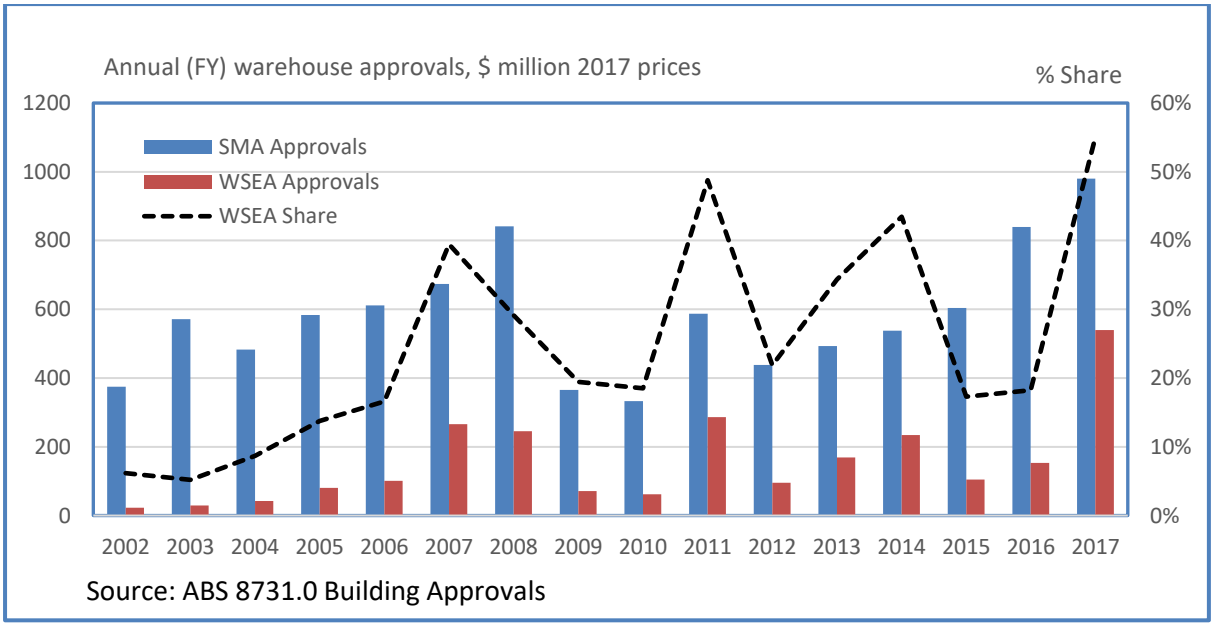


Chart 3 - – The Rise in Warehouse Approvals in Sydney and WSEA's Rising Share



[14] See Appendix 2 which discusses estimation of approval values in real terms.

7.4.2 Implications for Demand for Industrial Land

The average take-up of industrial land in the period 2008-14 was 163 hectares. The levels for 2015 (105 hectares) and 2016 (171 hectares) on average is actually marginally lower (138 hectares). That is, the lift in building approvals in Chart 2 had not yet been reflected in the take-up in new industrial land.

Given the usual lag between approvals and building work commencing, and that the real surge in approvals was in 2016-2017, it is probably too early to expect the surge in demand to be reflected in the figures for uptake in land.

Certainly, the lift in business investment, particularly in warehouse construction, suggests that the take-up of industrial land should be running at much higher levels in 2017 and 2018. Compared with 2008-09, when uptake was 230 hectares per annum, building approvals are 60% higher.

Applying uplift factors of 30% (low) and 80% (high - based on current levels of approvals), to the 2008-14 average of 163 hectares, suggests take-up of 210-290 hectares per annum.

7.4.3 Take-up and Supply

The latest ELDM estimate had 660 hectares of serviced land which was undeveloped at the start of 2017. Based on 163 hectares per annum, that is about 4 years supply, which itself is below the official benchmark for desired supply of 5-7 years.

But if the take-up is 210-290 hectares per annum, the number of years supply drops to 2.3-3.1 years supply or about half the level of the benchmark.

In short, supply was tight in 2017 and (highly) probably tightened further in 2018.

7.4.4 Reconciling Demand and Supply – Risk of a Supply Gap Emerging

In Chart 4, we have taken the take-up of new industrial land in the Sydney Metro Area and, assuming a plot ratio of 0.57, presented that in terms of the Gross Floor Area (GFA) of industrial space it will generate (see Appendix for discussion of methodology). The value of approvals gives the floorspace demanded and is estimated on the assumption that 93% of approvals translate into actual new buildings, and that the cost per square metre is about $725.

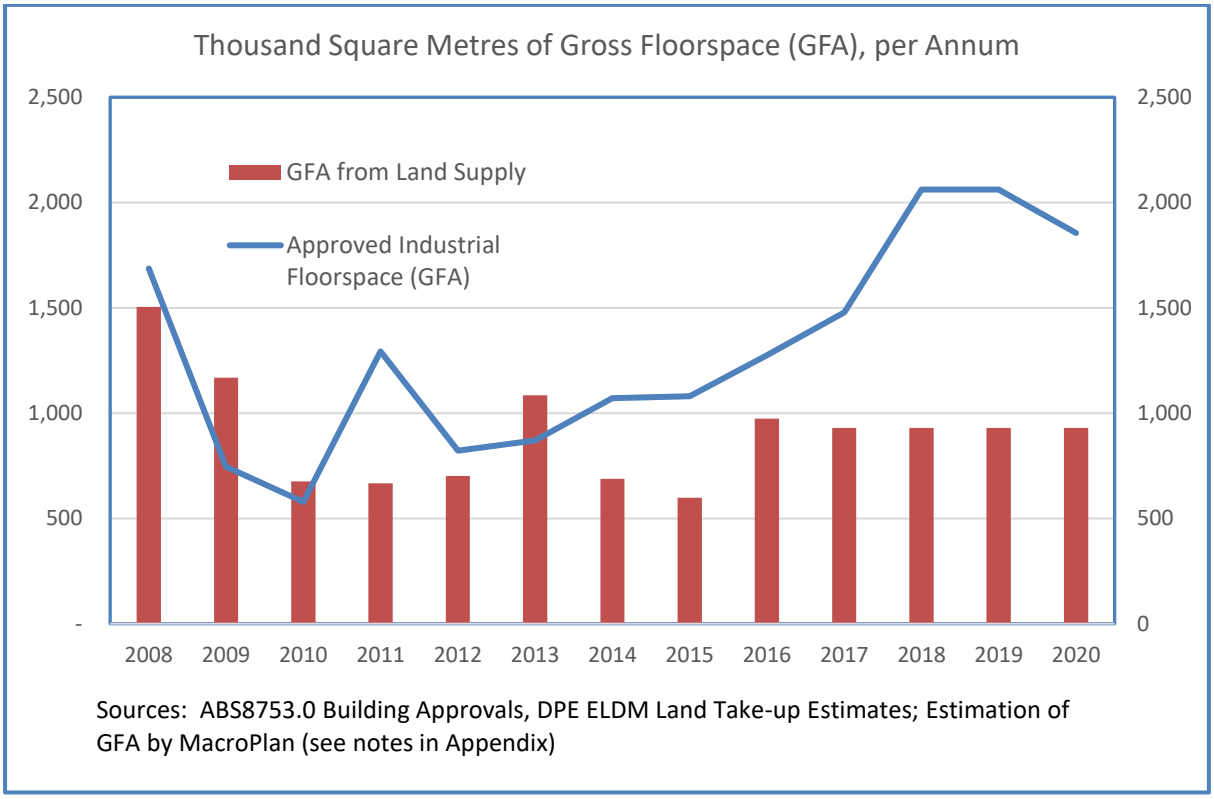
For the period 2008-16 overall, these estimates of supply and demand have the market broadly in equilibrium.

For the period, 2017-20, the demand level reflects the high level of actual approvals in 2017 and 2018 to date, and business expectations for the level of investment in new buildings to remain at high levels into 2019. Demand in 2018 and 2019 is estimated at just over 2 million square metres per annum. For 2020, a decline of about 10% is factored in. On the supply side, the Chart assumes that the uptake is 163 hectares per annum, the ELDM estimate of the average take-up for 2008-14, capable of supplying close to a million square metres of industrial space. In practice the actual amount of supply might exceed that but given the current stock of undeveloped serviced land, that would imply either a substantially faster run-down in that stock level to extreme lows, or an unexpected acceleration in new supply.

Chart 4 highlights the potential for a significant supply gap to emerge in the period 2018-20, exacerbating the price pressure already in the market. Those price pressures will then act as a

constraint on demand and investment, which in turn would have adverse implications for economic growth and job creation.

Chart 4: Reconciling Demand and Supply in the Sydney Industrial Market



7.4.5 Latest Price Data

While the residential housing market in Sydney has been in decline from its peak in the September quarter 2017, with now three quarters of declines recorded (Corelogic), the latest report from Colliers confirms that prices are still rising strongly in the industrial market. Significantly, the price growth has been higher in the West, with the Outer West (including WSEA) showing the largest price gains. This is consistent with the very tight market emerging in 2018.

Table 1: Q1 Colliers Edge Data: Land Value by Sub-market

Sub-Market	Q1 2018 ($/sqm)	QoQ Growth (%)	YoY Growth (%)
West	$575	7.0%	26.4%
North West	$600	11.6%	23.1%
Inner West	$600	0.0%	26.3%
Central West	$550	10.0%	25.7%
Outer West	$600	14.3%	33.3%
South West	$525	0.0%	23.5%
North	$2,000	14.3%	19.4%
South	$1,925	0.0%	4.1%
Sydney Average	**$970**	**6.9%**	**17.2%**

To note: Land Values refer to 2.5 ha serviced sites

Source: Colliers Edge

7.4.6 A Closer Look at the WSEA.

The take-up figures indicate that WSEA has supplied 57 hectares per annum or about 35% of the take-up of industrial land in the period 2008-16. As of the start of 2017, there was a stock of 150 hectares of serviced land in the WSEA, which at that take-up rate represented just 2.6 years supply. However, if higher uplift factors are applied (as per SMA analysis), and take-up rates were 75-105 hectares per annum, the level of supply drops to 1.3-2 years supply.

The addition of Mamre West in theory would have alleviated this, but prospective tenants have already claimed a high proportion (over 80%) of the new supply this new development will create.

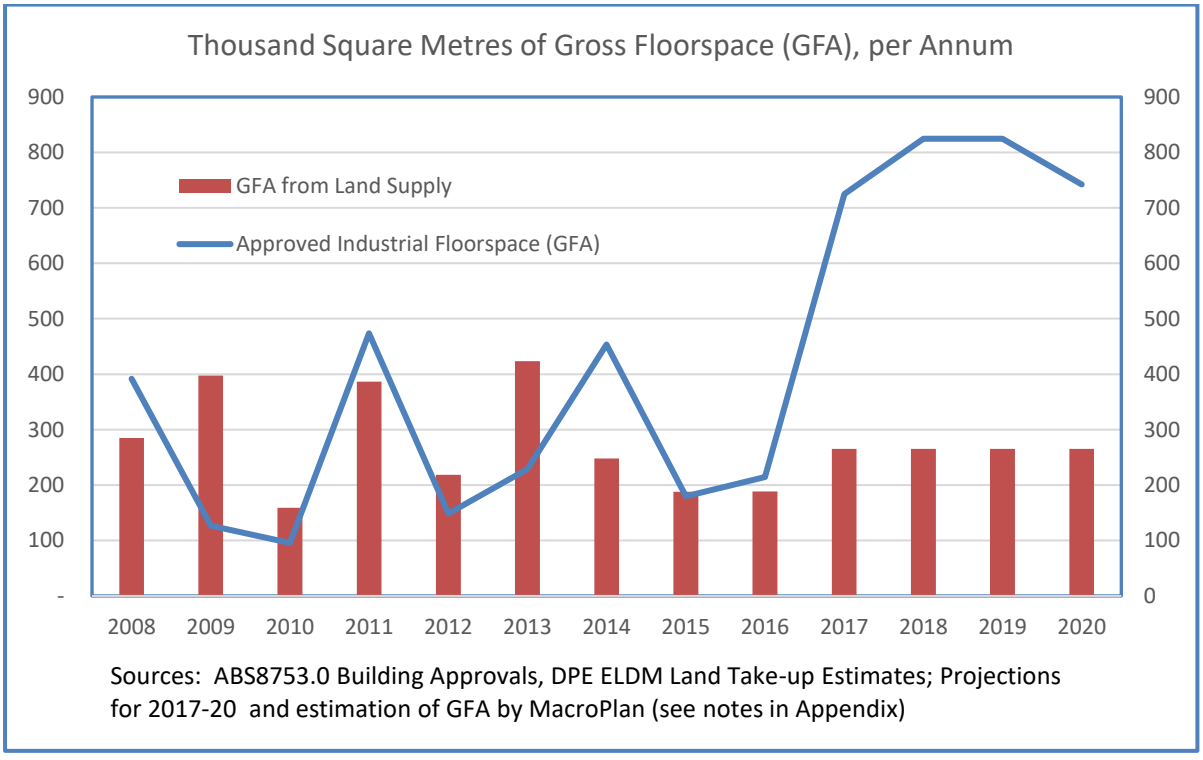
As with the broader SMA, the emerging potential shortage can be looked at in terms of supply-demand gap analysis.

7.4.7 Supply-Demand Gap in the Western Sydney Employment Area

In Chart 5 we have presented for the WSEA sub-market, the equivalent of Chart 4 for the Sydney market. (See Appendix for discussion of assumptions.) On the demand side, the assumption is that about 40% of demand will be directed to the WSEA, while assuming that about a third of supply comes from the WSEA. The supply gap that that generates is clearly unsustainable.

But that demand for industrial land in the WSEA is strong is evidenced by the faster rise in prices in this market (see above – Colliers report). And whereas the trend has been for WSEA to account for about 33% of approvals, in 2016/17 the WSEA accounted for 45% of total industrial approvals and 55% of warehouse approvals. This points to the shift in demand which the State Government's commitment to further develop transport infrastructure in the area near the new WSA airport might be expected to generate.

Chart 5 Reconciling Demand and Supply in the WSEA Industrial Market



7.4.8 A Closer Look at Two Key Precincts within the WSEA

Erskine Park Precinct

The ELDM data had 116 hectares of undeveloped land in this precinct at the start of 2017, of which 104 hectares was serviced and in theory available to meet demand. However, 30 hectares of this land is the old quarry site which would require remediation which means it is a long-term prospect but not there to meet any short- to medium-term demand. Most of the balance is land held by Fitzpatrick Investments. It appears to have no committed time-line to releasing this land to meet demand. Given the tightness of the market, that would be a sound strategy.

Eastern Creek (EC)

The ELDM data has 332 hectares of undeveloped land and 37 hectares of serviced land in this precinct at the start of 2017.

The adjacent Ropes Creek precinct, which is all undeveloped, has presumably been "on hold" as an earlier proposed route for the Western Sydney Freight Line (WSFL) across the Archbold Road (over the M4) was investigated. With the WSFL now proposed to follow the Sydney Pipeline through WSEA towards the mooted M9, the "on hold" status may be lifted. That "on hold' status probably applies to some (perhaps 100 hectares) of the Eastern Creek land next to Ropes Creek.

The available land in the EC precinct appears to be principally held by Australand and Jacfin. Development appears to be occurring at a fast pace on the Australand land in EC Stage 3, which is close to being fully developed. But the Jacfin land remains largely undeveloped despite its good location. Of the original estimated 120 hectares in this sub-precinct, only about 10 hectares is developed. The development of the extension of Eastern Creek Drive, which is part of the plan for this area, is required to open up the land in northern part of the EC precinct.

7.4.9 Implications of a Tightening Market

When the supply of land is controlled, with a set number of years of supply available, the issue is what level of supply is required to avoid upward pressure on prices. There will be a tipping point at which the scarcity premium starts rising and the optimal strategy for landowners will be to hold.

It is not clear whether the 5-7-year supply benchmark is adequate to avoid upward pressure on prices, and on what basis this benchmark has been decided. But, regardless, what is clearly the case is that actual levels of demand in the Sydney market imply that supply is presently just 2.3-3.1 years, or about half the level of the benchmark. The supply-demand gap analysis (Chart 4), highlights a very significant shortfall emerging in the period 2018-20. The position is even more extreme in the WSEA market, with supply at a mere 1.3-2 years, because this has become the preferred location for the logistics sector and because supply has not, or not been able to, respond. The supply-demand gap analysis (Chart 5) highlights the extreme shortfall emerging in 2018-20.

The risk with supply benchmarks is that demand can exceed expectations, leading to unintended consequences. These risks have emerged, with the 2008-14 experience not reflective of the higher economic growth trajectory that the Sydney economy has since taken. That supply has been inadequate is evidenced by the on-going surge in prices.

What the market needs is a competitive supply of land. That means more land and more players in the market to make it competitive.

7.4.10 APPENDICES to 7.4

Appendix 1: Methodology for Charts on Demand and Supply

In the two charts reconciling the demand and supply in the industrial land markets, MacroPlan has used a number of assumptions. On the demand side, an assumption is made for the proportion of approvals that lead to actual construction (93% is assumed, which has been the long-term trend) and for the cost of GFA per square metre to convert that value of approved work into an equivalent amount of floorspace. Rawlinson (2017) Australian Construction Handbook cost estimates have been used as guide. In the case of WSEA, which is largely warehouses, the assumption is $700 per square metre. For Sydney SMA, with a lesser weighting to warehouses, the cost assumption is $725. On the supply side, a plot ratio of 0.53 has been used for the WSEA, while for Sydney SMA a higher ratio of 0.57 has been used. Readers should note that these assumptions generate estimates of supply and demand which roughly equate over the period 2008-16, which is what we would expect to observe. Supply and demand can be expected to vary from year-to-year.

Appendix 2: Methodology for Deriving Approvals in Real Terms

The ABS publishes the value of approvals by industry type (e.g. warehouses) only in nominal terms. In the Charts, all values have been adjusted to present them in real terms, in constant 2017 dollars. The deflator used is derived from ABS 8752.0, using tables 2 (volume) and 13 (value) for all non-residential buildings approved in NSW. The implicit assumption is that costs of construction rise at the same rate in all non-residential markets (e.g. office vs warehouse). This is reasonable.

7.5 Appendix 5 - Market Reports

7.5.1 Colliers -Sydney Industrial 2018

The 2017 report had noted that the trend within the SMA for industrial users to locate further west, and the associated trend for urban renewal of industrial land in inner and middle ring, has been amplified in the past two years. (Elsewhere, the report notes that industrial users are moving out on inner Sydney markets as well as the north, south and inner west sub-markets.)

The report notes the benefits of moving being lower rents; availability of larger sites; and availability of custom built sites to meet modern industry requirements, as well as purpose-built infrastructure to accommodate large heavy vehicles.

The report also notes that that A Plan for Growing Sydney and the NSW Long Term Transport Master Plan support the take-up of industrial land in outer Sydney by identifying future infrastructure which will connect outer Sydney to middle and inner areas, and the specific identification of the WSEA for future growth.

The number of large scale infrastructure projects currently under construction, coupled with the lack of stock on market available for sale and depletion of industrial zoned land across the Sydney Metropolitan area have, and will continue, to be a contributing factor to the rise in land values across all sub-markets.

The 2018 report noted upward pressure on prices emerging due to:

"The number of large scale infrastructure projects currently under construction (*i.e. strong demand*), coupled with the lack of stock on market available for sale and depletion of industrial zoned land across the Sydney Metropolitan area."

"With the price of land expected to increase further over 2018, it is projected that either:

- Rental values must also rise for new industrial developments to remain feasible,
- Supply from the Western Sydney Employment area be allocated and released for industrial use/zoning,
- Or both."

Colliers Research and Forecast Reports Industrial 2017 and 2018

https://www.colliers.com.au/find_research/industrial/

https://www.colliers.com.au/find_research/industrial/industrial_-_first_half_2018/

7.5.2 Knight Frank April 2018

This report reports that:

- total vacant stock remained steady with a modest decline of 2.2% to record 371,863 sqm over the quarter, whilst on an annual basis vacancy has declined by 8.4%. Limited supply and strong tenant demand from 3PL and transport operators have been the key contributors.
- Overall vacant supply is 40% below its average.

- The Outer West and South West precincts continue to dominate vacant stock, accounting for 43% and 28% respectively of total available stock. The limited space available in the Inner West and South Sydney regions is due to constrained land supply and owners opting for residential re-developments.
- Absorption levels remained in line with the historical average with 147,609 sqm leased over the quarter and 552,395 sqm on an annual basis. Prime stock accounted for 79% of take up over the past 12 months, partly due to new developments and speculative stock coming to the market.

http://content.knightfrank.com/research/447/documents/en/sydney-industrial-vacancy-analysis-april-2018-5530.pdf

7.5.3 BIS-Oxford November 2017

The latest BIS-Oxford study finds that "the Sydney industrial property market remains buoyant, with record-strength occupier demand matched by equally strong construction" (of new industrial buildings).

(MacroPlan comment: this would be consistent with high take-up of industrial land.)

In the investment market, the BIS-Oxford report reports that "yields continue to firm and prices to rise as investor demand far exceeds the quantum of property for sale. We have seen exceptional returns to investors from industrial property not only in Sydney, but across the eastern seaboard markets."

https://www2.bis.com.au/reports/syd_ind_r.html

7.5.4 CBRE 2018 Report on Western Sydney Airport

This on-line report (not downloadable) notes that (as of January 2017), there were 12,308ha of industrial zoned land and 2,792ha of business (business development, business park and enterprise corridor) zoned land within Greater Sydney. Of this, the Western Parkland City is home to 41% of total industrial lands (5,061ha) and 29% of total business lands (814ha). With the need to rebalance population and jobs growth west of Parramatta, and the opportunity to rezone lands for employment within the Eastern Harbour and Central River cities limited, the Western Parkland City's priority growth area is expected to accommodate the majority of this growth over the next 10 years and beyond.

CBRE forecasts that at current projections, the availability of land within the WSEA precinct may be enough to satisfy demand for only another five years.