



# Industrial Land Supply Analysis

Kurri Kurri, Cessnock

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# Executive Summary

The purpose of this report is to undertake a market assessment of the proposed employment lands within the Hydro Aluminium Kurri Kurri Smelter site on Harts Road, with the objective of identifying the development potential of future employment lands on the subject site.

In summary, having had regard to the analysis contained in this report, it is our view that the subject site can support future industrial development, with market evidence suggesting freight and logistics and building services as the most likely industrial segment targets for the site. While other opportunities are present, such as intermodal / rail maintenance facilities, they are somewhat contingent on the Port of Newcastle expanding containerised freight operations in the case of an intermodal facility and improving connections with the coal freight network in relation to the rail maintenance facility. Such facilities would likely take up a significant portion of the subject site (in excess of 40 hectares).

Key findings of the assessment are summarised below:

## DRIVERS OF INDUSTRIAL DEVELOPMENT

- Freeway Business Park has somewhat comparable access to highway interchanges as the subject site. Over the last 3 years (financial years) Freeway Business Park has experienced 14.1 ha take-up of vacant land per annum. Stripping out the 'outlier' 15 ha sale in 2010 to Aldi and the 6.3 ha sale at 53 Weakleys Street, results in a more conservative annual take up of approximately 7 ha per annum, representing an example of what the subject site could achieve under similar conditions.
- The limited number of industrial precincts across Australia that contain onsite electricity generation infrastructure makes it difficult to determine the potential increase in 'take-up' rate associated with this type of development. However the Swanbank Enterprise Park are attracting some heavy industrial tenants, with high electricity requirements, on large lot size of 15 ha (Holcim). This would likely be impacted by the potential relative affordability of the electricity generated on site and its reliability. We note however that take-up has been limited as this type of development is largely attractive to large scale manufactures that have been experiencing a decline in activity over the past decade.
- Strong transport infrastructure in non-metropolitan / regional areas is not a guarantee of a strong demand and land take-up – as demonstrated in Parkes and Blayney which saw a marginal increase in land take up following completion of major transport infrastructure projects.
- Other infrastructure led precincts such as Erskine Park / Eastern Creek in Sydney's west, have attracted a significant uplift in both the take-up of industrial land and value upon the completion of enabling transport infrastructure.
- As such it is clear that potential exists for catalyst infrastructure projects to improve the commercial viability of existing and potential industrial precincts where they are well located in large population areas or in areas of high growth. With specific relevance to the future development of the subject site are road infrastructure upgrades such as the F3 extension and Hunter Expressway.
- These transport infrastructure projects are likely to drive the potential for growth in the freight transport and storage sector on the subject site, which based on forecasting is also expected to have strong underlying jobs growth over the next 20 years.

## HUNTER ECONOMIC FRAMEWORK

- The historic correction away from Australia's traditional manufacturing and agricultural led export market was driven primarily by the growth in demand for resources from the Chinese economy. Since 2003 China, and other growing export markets such India and South Korea have increasingly comprised a greater share of Australia's exports at the expense of advanced economies such the EU and US. Despite this existing export markets such as Japan continues to comprise a large market for Australian exporters, including thermal coal exports from the Hunter Region.
- Trade exposed sectors will continue to face challenging economic conditions with a higher exchange rate and competition from low cost competitors overseas, Manufacturers servicing a local market, tied to increasing population and household formation however are likely to continue to increase their

employment and capacity, in line with future population growth across Hunter Region LGAs. The availability of industrial land well connected to key transport routes and close to their market will likely drive the location of these businesses.

- This structural shift in the NSW economy from labour intensive and trade exposed sectors to a more serviced based economy is reflected in the performance of the Hunter Region's manufacturing sector. The key difference is the economic performance and growth attributed to the mining sector, with the Hunter Region comprising a large endowment of the State's coal resources.
- Locally the Cessnock LGA employment base is largely underpinned by industrial sectors, with accommodation and food services also higher than the regional profile, in part servicing mining sector workers. This contrasts the wider Lower Hunter Region which has a significantly higher proportion of Professionals (19.7%) compared to Cessnock (11.3%). This reflects the type of centres located in the remainder of the Lower Hunter with Newcastle and Lake Macquarie containing the highest proportion of white collar jobs base.
- The place of residence of local workers illustrates a moderate to high job containment rate for a regional location in Cessnock, with 64.8% of workers living within the Cessnock LGA, with the industrial sectors located in Cessnock drawing from a local workforce. In addition to this, 11.6% of workers reside nearby in Maitland, which while sitting outside the LGA border illustrates that there is a high propensity for Cessnock workers to live close to where they work.
- This has ramifications for potential uses on the subject site for accessing a workforce, which will likely draw on a local workforce. This may influence certain uses that rely on workers with higher education or typical 'white collar' backgrounds. The prevalence of local blue collar workers would support the presence of industrial sector businesses rather than higher order white collar based employment.
- Lower Hunter LGAs such as Maitland and Newcastle have more 'diverse' economies and industry bases, and offer greater employment opportunity for broader range of workers not associated with mining.
- The industrial sectors that make up the Lower Hunter economy, have had a mixed performance over the past 10 years:
  - The construction sector will be supported by ongoing population growth, slightly above what was seen between 2001 and 2011, specifically benefiting residential construction businesses and furniture and fabricated metal manufacturers. Civil engineering and non-residential construction will be supported by a strong infrastructure and mining project pipeline.
  - The wholesale trade industry is contracting at the Regional level, and this will have a dampening effect on demand for industrial land in the region. However, wholesale trade of building materials is likely to grow in line with construction industry growth.
  - The transport, postal and warehousing sector provides essential services and employs approximately 606,200 workers nationally in 2011 - 12. Its continued expansion is tied to the movements of goods and commodities, and is highly impacted by imports and exports. In the Lower Hunter this is largely comprised by coal exports, being shipped to the Port of Newcastle, and containerised freight servicing the local population. We note that the current strategy for the Port of Newcastle is unlikely to see a significant growth in container freight as the Government's preference for container freight growth lies with Port Botany and Port Kembla.
  - Despite moderating commodity prices, the mining sector has a strong investment pipeline likely to support future employment and servicing industries. Given the variable nature of commodity prices and factors impacting our employment forecasts for the mining sector will factor in estimated employment derived from existing projects forming a moderating share of employment growth for the medium to long term.
  - The manufacturing sector regionally will continue to comprise a reducing proportion of overall employment share, however will continue to be a major employer within the region. This will not be consistent across all types of manufacturing with a number of manufacturers tied to residential construction which will continue to expand in line with population and household formation



growth. Manufacturers that face competition from abroad or rely on export markets will continue to be constrained by a historically strong Australian dollar and international operating cost disparity.

- There is a broad shift in economic structure occurring not just in the Hunter Region but nationally, from traditional industrial based employment to professional services and higher order employment. Despite this, the local industry sectors are likely to mirror its local blue collar workforce, in addition to expanding industry sectors within the Lower Hunter, such as construction and transport, postal and warehousing.

#### LOWER HUNTER EMPLOYMENT LAND SUPPLY

- When assessing the capacity of employment lands to accommodate future industry growth, it is important to consider where the majority of this vacant employment land is focused, with over half of this located in the Tomago Industrial Area, the Hunter Economic Zone (HEZ) and Singleton Green Industrial Estate.
- It is possible that not all of the current and proposed supply is seen as being suitable for servicing the demand which is expected to come mainly from the transport and storage, construction and mining industries. These businesses typically require large land parcels, and access to transport routes is of course a key requirement for transport and storage, and mining businesses (in terms of access to mining areas).
- Therefore the current supply does not necessarily preclude the development of new employment lands where the opportunity exists to provide employment lands that better meet the needs of industrial operators and may indicate gaps in the existing supply of employment lands.
- The proximity of the subject site to the Hunter Expressway and its connectivity to major population bases to the north and east will increase the competitiveness of the Hydro land over existing sites such as HEZ.

#### EMPLOYMENT LAND DEMAND FORECASTS

- Employment forecasting translates to a net industrial land requirement of approximately 239 hectares between 2011 and 2031 within the Lower Hunter.
- We note that this represents a net developable area and excludes allowances for roads, verges, open space, buffer areas and utility corridors that would be created through an industrial estate. The requirement for this additional non-developable area can vary significantly from one development to another however can require up to one third of a total development site and higher in extreme cases. As such this assessment could translate into a gross requirement of approximately to 360 hectares to 2031. This equates to an average annual take up of 18 hectares (gross).
- Based on population and employment forecasts for Cessnock this LGA is forecast to require an additional 38 net hectares of industrial lands (51 gross hectares) between 2011 and 2031. This represents an annual take up of approximately 1.9 hectares of net developable area (land not including roads, drainage, open space etc.), and equates to approximately 2.5 ha per annum gross developable area (assuming that non-developable area comprises 30%). We note however that this is based on relatively conservative employment containment rates for Cessnock and does not factor in the ability of the Hydro land to capture a higher share of employment land demand for the whole Lower Hunter based on its attributes and location on the new Hunter Expressway.
- This equates to approximately 16% of demand for industrial land within the Lower Hunter Region, making it a significant location for future industrial land within the Lower Hunter Region. Within Cessnock the key industrial sector driving this are expected to expand by a total of 23% over this period, with the following sectors expected to drive this:
  - Mining Services
  - Construction
  - Transport, postal and warehousing.

## DEVELOPMENT OPPORTUNITIES ASSESSMENT

- In addition to the standard industrial operator and freight and logistics businesses that would be attracted to the site, there is potential to accommodate intermodal and rail maintenance facilities on site.
- There would appear to be more immediate potential for a small scale rail maintenance yard, with land reserved for expansion pending future rail connections to the westward line and northern to line to Brisbane. The potential intermodal facility is dependent on a substantial increase in containerised trade being imported through the Port of Newcastle. We note however that the current policy is to favour expansion of Port Botany and Port Kembla over expansion of the Port of Newcastle, which may limit or a least delay the opportunity for a new intermodal terminal.
- Both these uses would potentially increase the land-take within the subject site, expected to require in excess of 40 hectares of land in close proximity to Maitland railway through the subject site.
- Given the gross developable area of the subject site for industrial / employment land is approximately 250 hectares, if a rail maintenance yard was developed, the remaining land would comprise 210 hectares. Based on the approximate gross take-up of land, this would be expected to take between 14 and 28 years to develop.
- The characteristics of the subject site, due to immediate collocation to the Hunter Expressway could potentially achieve take up rates similar to the Freeway Business Park for its standard industrial product, between 5.3 hectares and 10.5 hectares per annum net, and 7.5 hectares to 15 hectares gross (including roads, verges etc.).
- There is potential for catalyst infrastructure projects to improve the commercial viability of existing and potential industrial precincts. With specific relevance to the future development of industrial precincts are road infrastructure upgrades such as the F3 extension and Hunter Expressway.
- These transport infrastructure projects are likely to drive growth in the freight transport and storage sector in the Lower Hunter. This will drive demand for industrial land in the region.
- We note that we have been asked to consider the specific value of additional infrastructure enhancements to the site which we make the following comments on:
  - **The Hunter Expressway upgrade** – as discussed, this will improve the accessibility of the site and will open up opportunities for the site to attract industrial development from sectors that otherwise would not have considered this location. As such there may be opportunities for the site to be attractive to warehouse and transportation businesses that are reliant on accessibility and for businesses that service the mines due to increased accessibility to areas in the Upper Hunter.
  - **Upgrade of the Hart Road interchange from half to full** – this opportunity would be of particular relevance for large scale high volume distribution facilities (such as supermarket distribution centres) or a rail intermodal terminal (discussed below). There will be a limited number of users that would seek this type of accommodation in the Lower Hunter and therefore the upgrade would most likely be proposed in response to the need for such a facility. In the absence of a large scale high volume user, then the existing proposed transport access network would be suitable for most users.
  - **Connection to the South Maitland railway line** – this will provide two distinct opportunities:
    - i. Rail maintenance and storage for coal freight trains, Through discussions with Lycopodium, there is a clear opportunity for the site to provide train storage and maintenance facilities which indicatively could occupy a site of approximately 40 hectares
    - ii. Intermodal rail terminal. This site appears to be very well positioned to accommodate a rail intermodal terminal given its proximity to the Hunter Expressway and its position on the South Maitland rail line. It is noted however that this is somewhat dependent on containerised freight volumes growing at the port of Newcastle.

- **Access to cheaper energy sources (e.g. gas and renewables)** – From our review of other facilities such as the Swanbank Enterprise Park in South East Queensland there may be some users that could benefit from “over the fence” energy supply agreements, however these users are few and in a difficult where manufacturing is the major source of demand (which is in a period of decline). Overall we would see the availability of energy as a positive and would be seen as a potential benefit to most potential tenants.
- **The impact on energy intensive uses** – as discussed above, energy intensive users are in manufacturing and are having difficulty competing with lower priced import markets. As such we would see there being limited opportunity for a large number of energy intensive users being available to the site, with many manufactures facing issues familiar to Hydro Aluminium.
- **Opportunities arising from the connection to the National Broadband Network (NBN)** – connectivity to internet is a growing requirement for all businesses, from office based environments to transport & distribution facilities where orders are tracked electronically. As such, connection to internet services including the National Broadband Network will be an important infrastructure element going forward. Specific opportunities such as data centres may have other requirements such as accessibility to specialist staff and clients that may influence their location decision more than pure land price.



# Introduction

Urbis have been engaged by Hydro Aluminium Kurri Kurri Pty Ltd to undertake a market assessment of the proposed employment lands within the Hydro Aluminium Kurri Kurri Smelter Site with the objective of identifying the development opportunities and constraints that exist within the Lower Hunter industrial market that could support development of future employment lands on the subject site.

This study is conducted both at a regional level, looking broadly across the Lower Hunter Region's economy and industrial market, and more specifically within Cessnock. It will also consider the locational and advantageous site attributes that may be supportive of specific types of industrial development, as well as the impact of existing and future infrastructure investment on potential development opportunities on the subject site specifically.

This will be assessed through an analysis of the Cessnock LGA and Lower Hunter Region's existing stock of employment land, and the long-term workforce and employment drivers that will underpin demand for different types of employment land.

## SUBJECT SITE

The subject site of this industrial land supply analysis is located on Hart Road, Kurri Kurri. The subject site contains the Hydro Aluminium Pty Ltd aluminium smelter, which ceased operations in September 2012 with long-term closure and decommissioning providing the opportunity to redevelop the smelter and associated buffer land. The smelter began operations in 1969, and was a major employer within the Kurri Kurri community. While the closure of the smelter has resulted in loss of local jobs within Kurri Kurri, there is potential for future industrial land to attract businesses that will employ local workers.

## INFRASTRUCTURE

Physical infrastructure and capital investment can provide a catalyst to the development of industrial operators. It impacts a number of drivers associated with the success of industrial precincts, namely:

- Access to customers/users
- Connectivity and access to key transport routes (roads, rail, port facilities, suppliers, etc.)
- Accessibility by workforce
- Connection to high population growth areas

Physical infrastructure has a significant impact on these factors, providing greater accessibility to customers and workforce and reducing journey times. There are a number of major infrastructure projects existing, planned or under construction currently in the Lower Hunter Region that are underpinning industrial sectors. These include:

- F3 Freeway (now M1 Pacific Motorway) to Raymond Terrace Upgrade
- Upgrade to the Kooragang Island (Terminal 4);
- The Mayfield Port Redevelopment
- The Hunter Expressway
- South Maitland railway

In addition to this, there is a number of 'soft-infrastructure' or 'social infrastructure' that supports both industrial sectors, but the broader Lower Hunter economy. These primarily include;

- The University of Newcastle in Jesmond

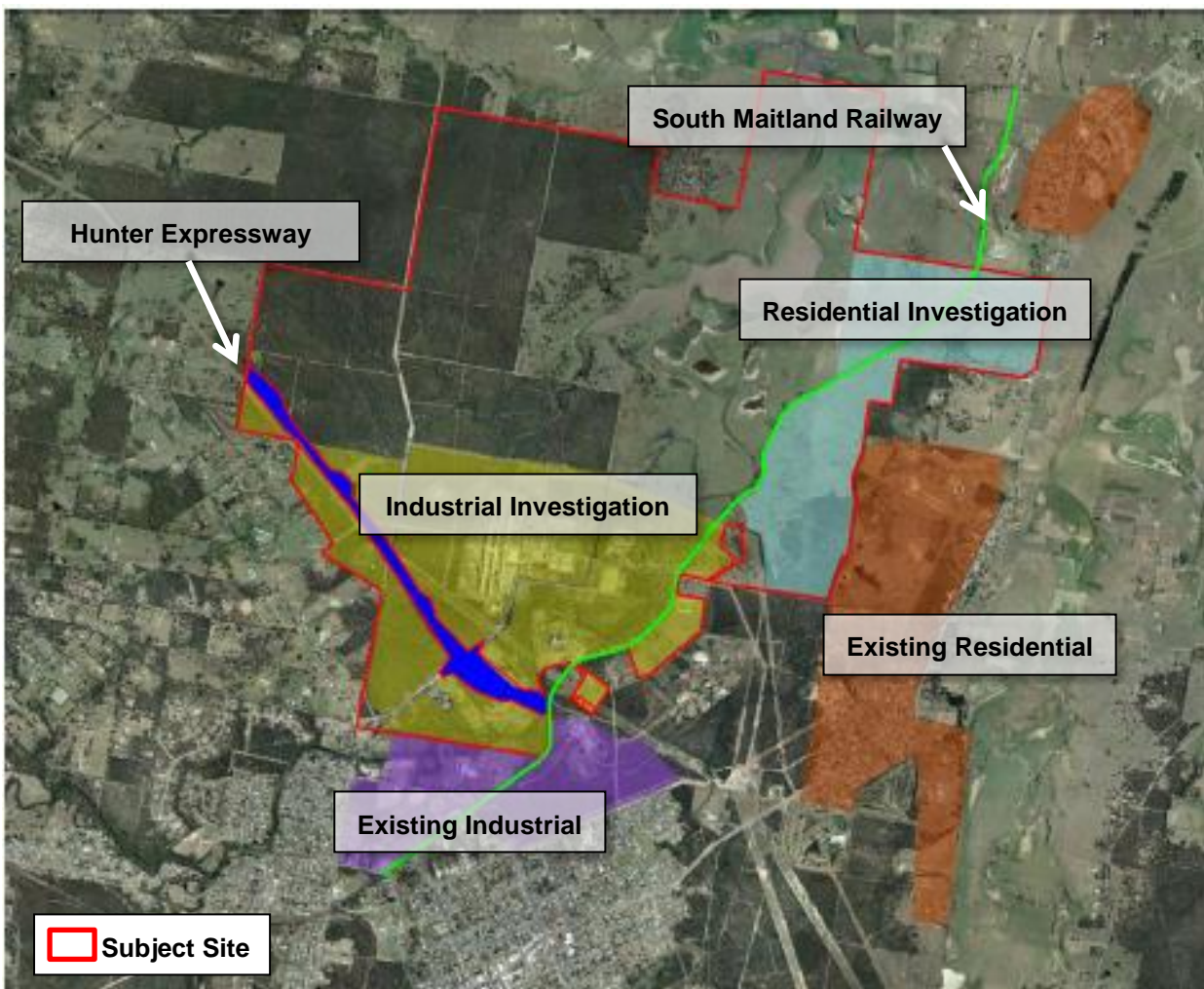
- The planned 'NeW Space Precinct', relocation of a number of University of Newcastle faculties into the Newcastle CBD
- The network of TAFEs throughout the Hunter, including the Kurri Kurri campus located directly adjacent the subject site on McLeod Road, which contains a specialised Plant and Heavy Vehicle training centre
- Industrial training programs operated by private businesses such as the WesTrac Institute, a training centre that services the construction, transport and mining industries, which facilitates the training of up to 4,000 students annually

Proximity to this infrastructure is a key factor in the successful development of industrial precincts, within the Lower Hunter.

## THE PROPOSAL

With the suspension of smelter operations the opportunity to redevelop the subject site into employment lands exists. The existing use of the site includes 60 hectare (ha) plant area and 2,500 ha buffer land, which is being assessed for its capacity to accommodate industrial industry sectors. Initial investigations into the development potential of the subject site, with the potential for future land uses outlined below in Figure 1:

FIGURE 1 – POTENTIAL FUTURE LAND USE – SUBJECT SITE



Source: Hydro Aluminium Pty Ltd; Urbis

The purpose of this analysis is to provide the client Hydro Aluminium Pty Ltd with recommendations regarding the extent to which the subject site to accommodate industrial development, and the markets capacity to absorb this. Urbis understands that this analysis will be used to:

- Assist Cessnock City Council in strategic land use considerations in Kurri Kurri, and in the wider LGA of Cessnock
- As input into the masterplanning process for employment lands development
- In the feasibility analysis associated with the development of industrial development on the subject site
- That the developable area of the subject site is 250 hectares (gross) for the industrial components.

## REPORT STRUCTURE

The output of this assessment will be used to prepare a preliminary concept plan and subdivision layout for the overall site, which will be used to inform to support a planning proposal to Council to rezone the land. The structure of this assessment is as follows:

- **Section 1** reviews the drivers of industrial land development, including the locational characteristics driving industrial demand and case studies of industrial precincts relevant to the subject site
- **Section 2** provides an overview of the Hunter's economy, highlighting the key drivers relevant to the demand for industrial land within the Lower Hunter
- **Section 3** total supply and characteristics of competing supply throughout the Lower Hunter Region will be reviewed, to identify the total quantum of employment lands (hectares), its location and suitability for accommodating forecast demand for employment lands
- **Section 4** will forecast employment by industry sector, and the subsequent demand for different type of employment lands. This will be conducted on a regional and LGA level, providing a specific forecast for Cessnock LGA in which the subject site sits

**Section 5** will provide a high level assessment of the industrial market within the Lower Hunter as well as the development opportunities specific to the subject site. This will include potential uses that could locate onto the subject site and their potential take-up rates

# 1 Drivers of Industrial Development

Analysis of historic take up rates of employment lands and associated distribution, economic conditions and industry trends has identified some clear drivers for employment land demand in the Hunter Region. Interrogation of the key issues revealed that in general for the development of employment lands, preferred locations are typically include:

- Access to customers / end users
- Connectivity and access to key transport routes (roads, rail, port facilities, suppliers, etc.)
- Accessibility to a local workforce
- Connection to high population growth areas
- Price / affordability and size / format of employment land being suitable to target industries / industrial operators
- Opportunities for industry 'agglomeration' / economies of scale

This criterion can be used to assess the potential employment land development opportunities and will be assessed when considering the positioning of the subject site in the Lower Hunter industrial market, and will be considered when assessing the development opportunities for the site. 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:

- Economic growth – including broad macroeconomic indicators and industry specific performance
- Population growth and demographics – this encompasses both the location of the customer base and the workforce
- Infrastructure – allows for efficiency of operations and efficiency of connections throughout the supply chain; and
- Competing industrial precincts – 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

## 1.1 LOCATIONAL DRIVERS FOR INDUSTRIAL BUSINESSES

Trends in employment land demand patterns and business movements and relocations within NSW employment lands have been examined to identify the key 'push and pull' factors driving demand within the Lower Hunter Region. An understanding of these dynamics assists in projecting the type and total demand for industrial land on the subject site.

The decision of where to locate industrial businesses are generally driven by a combination of attributes that make it a desirable business location (pull factors) and issues related to the functionality or competitiveness of alternative locations (push factors).



TABLE 1 – ‘PUSH’ AND ‘PULL’ FACTORS

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

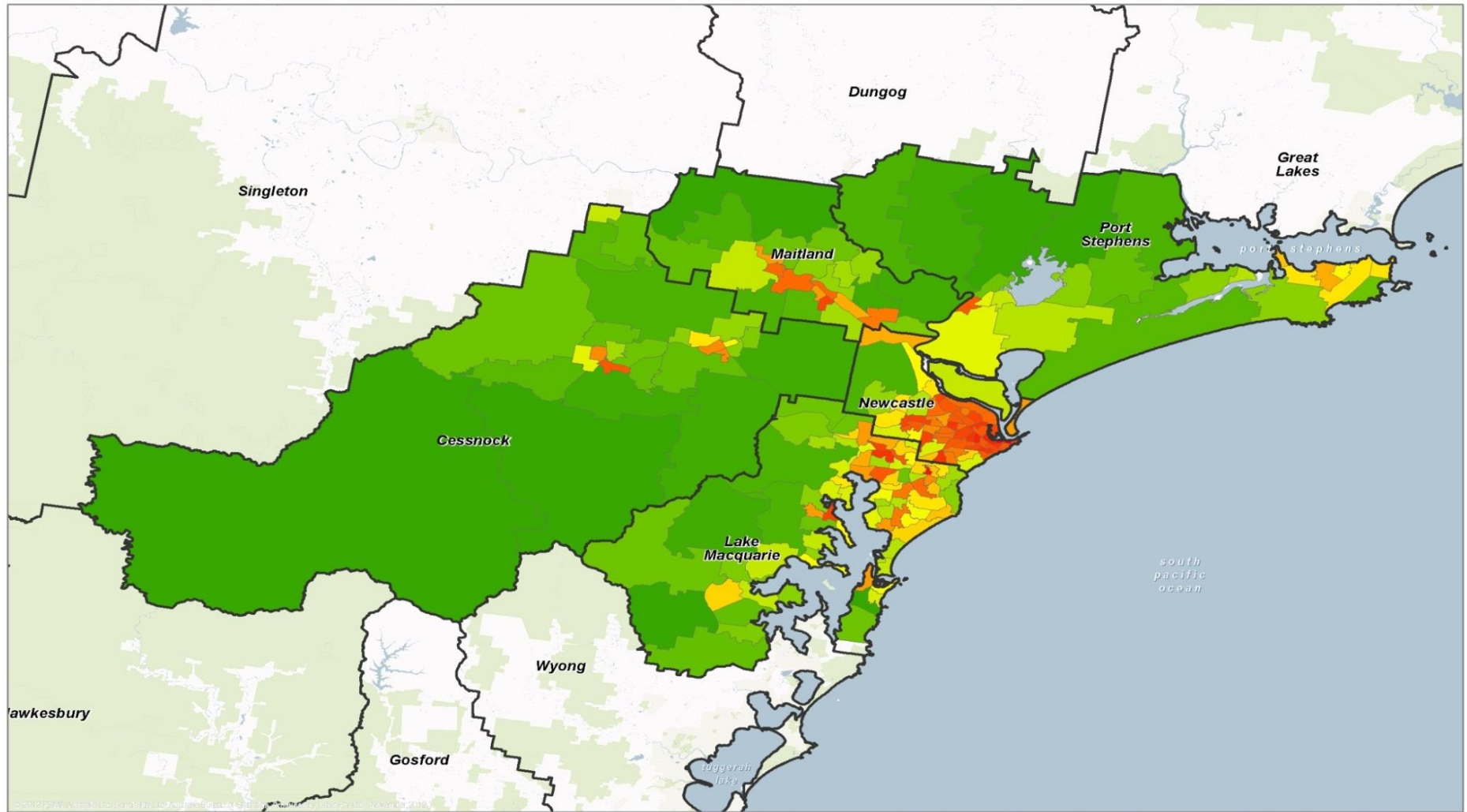
## 1.2 SPATIAL DISTRIBUTION OF PRODUCTIVE CAPACITY

The distribution of employment across different industry sectors will have implications for future employment land demand. Figure 2 maps out the distribution of industry throughout the Lower Hunter Region, as an indicator of the intensity of economic activity and physical distribution of the Lower Hunter’s industry base. Employment value as an indicator of economic size of key centres has been estimated as at 2011. It shows the average income of each industry weighted by its employment base, providing an indication of both the distribution of industry and its productivity. Employment data was based on travel zone (TZ) data compiled by the Bureau of Transport Statistics (BTS) for the Lower Hunter only, as no comparable data for the Upper Hunter Region is produced.

It shows the presence of key industry sectors throughout the Lower Hunter Region, with the presence of industry precincts along the New England Highway from Maitland to Newcastle highlighted, the activity generated in the Newcastle CBD, Glendale and the Port of Newcastle, as well as other regional industrial centres such as Kurri Kurri, Cessnock town centre and Raymond Terrace. The distribution of industry as illustrated in Figure 2 confirms and validates the following identified drivers for the location of industry sectors:

- Agglomeration of industry is around key centre locations
- Access to arterial roads and transport networks are key drivers, with industry along the New England Highway from Rutherford to Beresfield and close to the Port of Newcastle
- Accessibility and proximity to a local workforce

FIGURE 2 – LOWER HUNTER INDUSTRY BASE



### Hunter Region

TRAVEL ZONE INCOME PER SQ.M FOR 2011

Local Government Area



## 1.3 INDUSTRIAL PRECINCTS - CASE STUDIES

In order to validate the drivers above, and identify the impact they can have on the take-up rates of industrial land, a number of case studies are presented below that outline the development of local Lower Hunter industrial precincts, infrastructure led precincts and precincts that include power stations that allow for 'over the fence' economies of supply.

### 1.3.1 LOWER HUNTER AND CENTRAL COAST

#### HOLMWOOD & FREEWAY BUSINESS PARK

Holmwood Business Park is located at the junction of three key arterial roads, Sydney-Newcastle Freeway, New England Highway and John Renshaw Drive in Beresfield. Freeway Business Park is situated to the west of Holmwood Business Park, on the western side of Weakleys Drive (which becomes the Sydney–Newcastle Freeway at the John Renshaw Drive junction). Development of these estates commenced circa 1995.

Overall, the estates accommodate small to medium scale industrial operations with allotments primarily ranging in size between 1,500sq.m up to 5.5ha, albeit few allotments within the area exceed 30,000sq.m. Holmwood Business Park is the more established of the two estates with limited supplies of land remaining. Parcels available are typically around the edge of the estate.

In 2010 Aldi purchased 15 hectares of land from Hunter Land Holdings Pty Ltd, this skewed the typical sales rate illustrated in subsequent years ranging from 3.9 ha in 2010-11 to 8.1 ha in 2012-13.

TABLE 2 – HOLMWOOD / FREEWAY BUSINESS PARKS

HOLMWOOD / FREEWAY BUSINESS PARK	2009-2010	2010-2011	2011-2012	2012-2013	2009-2013 (ANNUAL AVERAGE)
<b>Area Take-Up (Hectares)</b>	23.5	3.9	6.4	8.1	10.5
<b>Average Sales Price (\$/sq.m)</b>	\$102	\$143	\$151	\$121	\$117
<b>Description</b>	<ul style="list-style-type: none"> <li>– Accommodates small to medium size facilities ranging between 1,500sq.m to 5.5 ha</li> <li>– Holmwood is the more established business park in the area and has high benefits from being situated near the main road infrastructures.</li> </ul>				
<b>Industries</b>	– Warehouse, Transport and Distribution				
<b>Tenants</b>	– Ceramic Tile Market, DBT, House & Garden, Caltex, Beavis Hire, Ministor, Justin Norris Swim Academy, Invitrogen, Advance, Technology Solutions Australia, Aggreko, Bridgestone, Sigma Pharmaceuticals, NSW DEP. Of Mineral Resources, Boral, CSR Humes, Humes Doors and Nuemann Steel				

## TOMAGO BUSINESS PARK

The Tomago Industrial Area is a 785ha industrial location comprising the expansive Tomago Aluminium plant, an established light industry component, and Hunter Industrial Park. Hunter Industrial Park is located as an extension to the north of the light industrial area, and totals 14ha in size. Approximately 5.78ha was released in stage one at the beginning of 2006, with the remaining 8.28ha released in stage two during 2007.

On average lots are sized between 3,000sq.m to 4,500sq.m, but range in size from 1,900sq.m to 1.2ha as the developer made the decision to offer a mix of sizes to cater for all needs rather than offer a generic sized park to the market. Recent transactions have achieved between \$120 to \$150/sq.m. Listing prices for available sites are around \$150-\$165.

The Park is home to a mix of local owner occupiers, national companies as well as support and allied companies to the aluminium plant. The surrounding industrial occupiers include Giroto Precast Concrete, Williams River Steel, Omega Chemicals, Minmet Operations, SMV Specialist Mini Vehicles, Komatsu and Forgacs Naval shipyard. Of significance to the locality is the development approval granted on 29th January 2009 for a new bus manufacturing plant, with Volgren completing in October 2009.

The Tomago site includes land that is suitable for both light and heavy industry. This would include warehousing, maintenance, and education, with rail, road, and conveyor infrastructure also planned. In February 2010, HDC sold 240ha of land to WEPL Investments Pty Ltd to enable the creation of an industrial estate that will generate employment opportunities over time.

The other 66ha section of the industrial park has been sold to WesTrac Mining Products Division (which occurred prior to 2009), who opened their new purpose-built facility in July 2012. The 23ha developed site is comprised of 12 major purpose built facilities, interconnected with a circulation spine, security buildings and extensive hardstand areas and landscaping.

TABLE 3 – TOMAGO INDUSTRIAL PRECINCT

<b>TOMAGO</b>	<b>2009-2010</b>	<b>2010-2011</b>	<b>2011-2012</b>	<b>2012-2013</b>	<b>2009-2013 (ANNUAL AVERAGE)</b>
<b>Area Take-Up (Hectares)</b>	0.8	3.3	2.2	1.9	2
<b>Average Sales Price (\$/sq.m)</b>	\$100	\$108	\$109	\$105	\$112
<b>Description</b>	– Average a size of 3,000 – 4,000sqm. Recent Transactions have ranged between \$120 – 140/sqm. Recently available sites are being offered at approx.. \$150-\$165/sqm				
<b>Industries</b>	– Warehousing, Maintenance, Education, Light and Heavy Industry				
<b>Tenants</b>	– Griotts Precast concrete, Williams River Steel, Omega Chemicals, Minmet Operations, SMV Specialist Mini Vehicles, Komatsu and Forgacs Naval Shipyard				

Source: Urbis; Redsquare EAC

## 1.3.2 INFRASTRUCTURE LED PRECINCTS

### PARKES INDUSTRIAL PRECINCT

PARKES	2008-09	2009-10	2010-11	2011-12	2012-13	2008-13
<b>Area Take-Up (Hectares)</b>	0.2	1.3	-	1.8	1.3	0.9
<b>Average Sales Price (\$/sq.m)</b>	\$33	\$40	-	\$43	\$58	\$46
<b>Description</b>	– The estate is located on the south side of Parkes, just off the Newell Highway. It can be accessed by Salesyard Rd and Station St.					
<b>Infrastructure / Investment</b>	<ul style="list-style-type: none"> <li>– In 2007/8 there was a review of the Newell Highway completed to identify any improvements need to increase the safety of the highway. This review resulted in a \$30 million program of works across the 3 year period of 2009-2012.</li> <li>– The works included an engineering program, an enforcement program dealing with speeding and new speed camera ‘point to point’ technology.</li> <li>– The engineering works featured new line marking and signage, upgrading minor intersections, dedicating turning lanes within some intersections, new sealing on connecting roads to the highway, removal of roadside hazards(trees etc) and installing safety barriers where hazards cannot be removed.</li> </ul>					
<b>Industries</b>	– The main industries of the area are product distribution and warehousing of stock for large retailers.					
<b>Tenants</b>	– Harvey Norman, Mitre10, Furniture one, Landmark and Reece Plumbing with many more similar large tenants demanding vast amounts of warehousing.					

Source: Urbis; Red Square EAC

### WESTERN SYDNEY EMPLOYMENT AREA (ERSKINE PARK, EASTERN CREEK AND SEVEN HILLS)

TABLE 4 – EASTERN CREEK INDUSTRIAL ESTATE

EASTERN CREEK	1991-1999	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
<b>Area Take-Up (Hectares)</b>	11.7	48.2	97.1	31.1	18	12.9	32.9	55.2	36.4
<b>Average Sales Price (\$/sq.m)</b>	\$150	\$290	\$306	\$315	\$312	\$306	\$303	\$308	\$302
<b>Description</b>	– Eastern Creek and Erskine Park feature many industrial developments, and is described as the Western Sydney Employment Area (WSEA). Located near the intersection of the M4 and M7 WSEA contains a significant proportion of Western Sydney’s employment lands.								
<b>Infrastructure / Investment</b>	– The M7 Motorway or the Western Sydney Orbital is a39.5km dual carriageway								

	<p>linking major motorways throughout Sydney, namely the M5, M4 and M2. The Motorway is a major north/south connection between both sides of the city which enables a clean traffic route for outside Sydney drivers to avoid the metropolitan routes like the Cumberland Highway and Prospect Highway.</p> <ul style="list-style-type: none"> <li>- The construction of this link saw a considerable increase in Industrial land and development activity within many of the linked precincts such as Seven Hills, Prestons, Eastern Creek, Erskine Park, Hoxton Park and the like. The growth of these precincts has been attributed to the combined effort of the state government's employment land initiatives and the centrally located light horse interchange within the M4 and M7.</li> <li>- The Preferred route and plan for the motor way was established by the then Commonwealth Minister for Transport in April 1994, leading to the Motorways Environmental Impact Statement being placed on public display in January 2001. This was shortly approved by the Minister for Planning and announced in 2002. In October of the same year (2002) the construction of the motorway commenced being completed by December 2005 at a total cost of \$2.23 billion. The infrastructure of the M7 is extensive with: <ul style="list-style-type: none"> <li>▪ 17 Interchanges along the route providing access to Liverpool, Fairfield, Blacktown and Baulkham Hills</li> <li>▪ 38 Underpasses and over passes maintaining local access for pedestrian activity</li> <li>▪ In Addition to this the off-road shared cycle/pedestrian pathway runs parallel to the entire motorway, connecting with the Sydney Cycleway Network.</li> </ul> </li> <li>- The motorway is completed clear of toll booths with tolls being collect electronically via a tag or a photo/identification of number plates on vehicles. Trips that have a distance of 20km or less the toll is calculated on a rate (\$) per kilometre, however if the trip extends over the 20km, the toll is capped, being adjusted only at CPI every quarter. The Current maximum toll is \$7.32 for all vehicles.</li> </ul>
<b>Industries</b>	<ul style="list-style-type: none"> <li>- Distribution, Logistics and Transport</li> </ul>
<b>Tenants</b>	<ul style="list-style-type: none"> <li>- Warehouses for DHL Supply Chain, Sony DADC, BlueScope Steel, Koorong Bookstore, Hasbro, Ceva and a Woolworths Liquor distribution centre.</li> </ul>

## SWANBANK ENTERPRISE PARK

TABLE 5 – SWANBANK, INDUSTRIAL PRECINCT

SWANBANK	2008-09	2009-10	2010-11	2011-12	2012-13	2013-2014
<b>Area Take-Up (Hectares)</b>	52	-	-	33	-	21
<b>Average Sales Price (\$/sq.m)</b>	\$19	-	-	\$23	-	Single sale undisclosed
<b>Description</b>	<ul style="list-style-type: none"> <li>- The estate is bounded to the north and north-west by Redbank Plains Road and the Cunningham Highway respectively and to the south via the Centenary Highway extension.</li> <li>- Swanbank Enterprise Park is set to be South Eastern Queensland's' largest and most sustainably prominent industrial precinct.</li> <li>- The park is located 27km SW of Brisbane CBD, with access from the Cunningham highway and the Centenary Highway extension.</li> <li>- The Facility comprises 260 ha of General Industrial Developable land and 40 ha of</li> </ul>					

	<p>Business park land with 200 ha of land used as a buffer zone.</p> <ul style="list-style-type: none"> <li>– The facility is well serviced by existing CS Energy Power stations, coal and gas fired as they are located within the park with associated Powerlink Trunk transition infrastructure. The Facility also enjoys Potable and Purified sustainable water products, as well as waste services and gas services through internal mains and linkages by Thiess and government infrastructure.</li> </ul>
<b>Infrastructure / Investment</b>	<ul style="list-style-type: none"> <li>– The Department of Main Roads Centenary Highway Extension was a capital cost of \$300 million to construct a at grade intersection to service the Swanbank Enterprise Park.</li> <li>– The federally funded Redbank Plains road and Swanbank Connection Roundabout provided by Auslink and Ipswich City Council was completed in 2010 for approximately \$10million</li> <li>– The park is also serviced by the Southern Regional Water pipeline and a purified recycled water pipeline which connects to the SEQ \$8 billion Water Grid.</li> </ul>
<b>Industries</b>	<ul style="list-style-type: none"> <li>– The main industries of the precinct are focused around manufacturing and the sustainability industry with projects such as the Power Generation/Gas Compression and New Power Station Facilities. There is also a large business park component planned for the area which will encompass a varied mix of industries.</li> <li>– The CS Energy Power stations, coal and gas fired, are located centrally within Swanbank Enterprise Park with associated Powerlink trunk transition infrastructure. This allows for the opportunity for major industrial power users to obtain ‘over the fence’ economies of supply. Standard industrial users are also catered for with Energex’s masterplanned network. The existing Redbank Plains Substation will cater for the initial stages, with additional infrastructure rolled out as required. Stanwell Corporation is developing a 400 mw generator on 47.6 hectares of land purchased in 2012.</li> </ul>
<b>Tenants</b>	<ul style="list-style-type: none"> <li>– There are already a number of tenants within the Swanbank area, however a number are contained within the Swanbank Enterprise Park. Holcim (15 hectares), TruEnergy (25 hectares), CS Energy (200 hectares), Thiess (250 hectares), Veolia (60 hectares), Austral &amp; PGH (40 hectares), Energex and Powerlink (20 hectares), BMI Resource Recover (49.6), Wood Mulching Industries, Lantrak (74.8 hectares)</li> <li>– Preliminary approvals for a paper mill and steel mill have been achieved, indicating energy intensive manufacturing processes are a potential use</li> </ul>

## 1.4 SUMMARY

Each of the examples outlined in Sections 1.3.1 - 1.3.2 illustrate the differing success factors associated with different industrial precincts, namely:

- Freeway Business Parks has somewhat comparable access to highway interchanges as the subject site. Over the last 3 years (financial years) Freeway Business Park has experienced 14.1 ha per annum take-up of vacant land. Stripping out the ‘outlier’ 15 ha sale in 2010 to Aldi and the 6.3 ha

sale at 53 Weakleys Street, results in a more conservative estimate of an annual take up of 7 ha per annum, an example of what the subject site could achieve under similar conditions.

- The limited number of industrial precincts across Australia that contain onsite electricity generation infrastructure makes it difficult to determine the potential increase in 'take-up' rate associated with this type of development. However the Swanbank Enterprise Park are attracting some heavy industrial tenants, with high electricity requirements, on large lot size of 15 ha (Holcim). This would likely be impacted by the potential relative affordability of the electricity generated on site and its reliability. We note however that take-up has been limited as this type of development is largely attractive to large scale manufactures that have been experiencing a decline in activity over the past decade.
- Strong transport infrastructure in non-metropolitan / regional areas is not a guarantee of a strong demand and land take-up – as demonstrated in Parkes which saw only a marginal increase in land take up following completion of major transport infrastructure projects.
- Other infrastructure led precincts such as Erskine Park / Eastern Creek in Sydney's west have attracted a significant uplift in both the take-up of industrial land and value upon the completion of enabling transport infrastructure.
- As such it is clear that potential exists for catalyst infrastructure projects to improve the commercial viability of existing and potential industrial precincts where they are well located in large population areas or in areas of high growth. With specific relevance to the future development of the subject site are road infrastructure upgrades such as the F3 extension and Hunter Expressway.
- These transport infrastructure projects are likely to drive the potential for growth in the freight transport and storage sector on the subject site, which based on forecasting conducted in Section 4 is also expected to have strong underlying jobs growth over the next 20 years.



## 2 Hunter Economic Framework

In assessing the potential for employment lands in the on the subject site, it is vital to understand the local property market characteristics, upon which regional and macro-economic conditions impact significantly. As such, this section analyses the Global, Australian, NSW and local economy, in terms of structure, performance and direction that impact the performance of the Hunter's industrial sectors. This includes:

- Global economic growth
- Australian and NSW economic performance
- Exports and trade exposed industry sectors
- Industrial sector growth
- Resident and worker demographic trends

### 2.1 GLOBAL ECONOMIC GROWTH

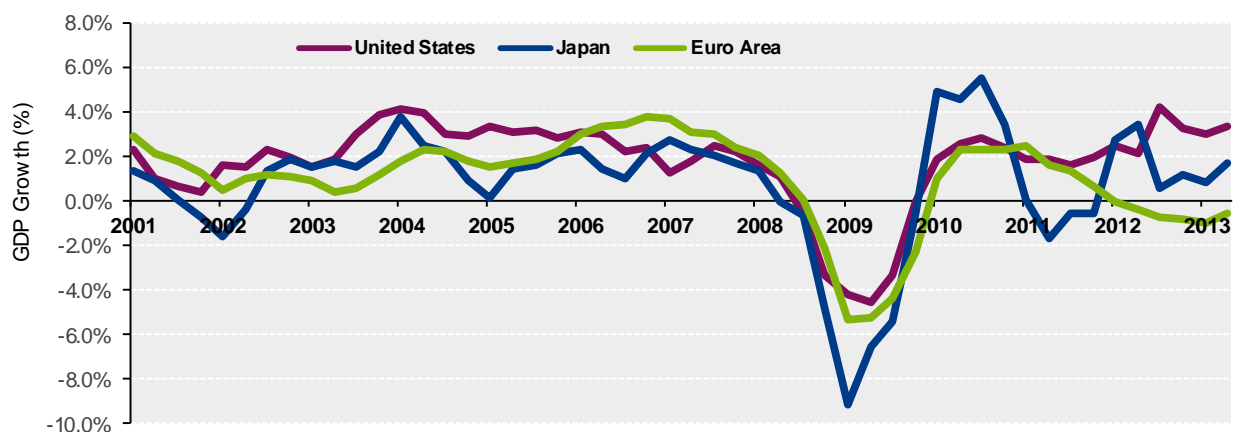
Figures 3 and 4 below outline the growth in Gross Domestic Product (GDP) amongst key global economies including China, India, USA, Japan and the combined growth rate of European economies. Their respective historic rates of growth showed a significant drop in 2009, in response to the 'Global Financial Crisis' (GFC), which consisted a global 'credit crunch' brought on by a weakening US housing market, that resulted in a widespread downward global correction in the financial sector.

This downward correction was experienced across the majority of economies world wide. This was particularly evident in 'Advanced Economies', which largely experienced recessionary growth during this period, as outlined in Figure 3 below. While similarly affected the Chinese and Indian economies maintained a positive growth rate over this period, as outlined in Figure 4 below.

FIGURE 3 – GDP GROWTH – ADVANCED ECONOMIES

### GDP Growth - Advanced Economies

UNITED STATES, JAPAN AND EURO AREAS 2000 TO 2012

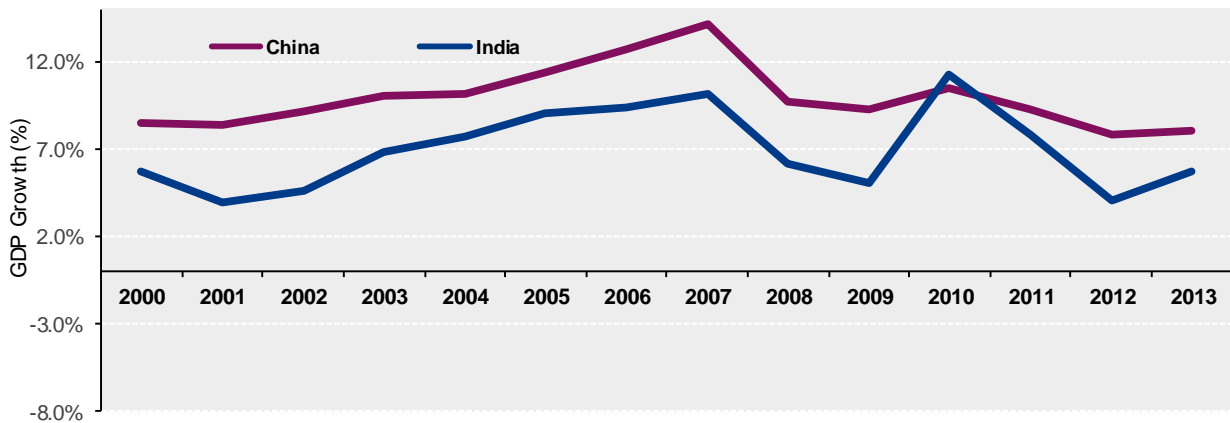


Source : Urbis; Reserve Bank of Australia, November 2012

FIGURE 4 – GDP GROWTH – DEVELOPING ECONOMIES

## GDP Growth - Developing Economies

CHINA AND INDIA 2000 TO 2013



Source : Urbis; International Monetary Fund, November 2012

Since 2010, many of these economies have returned to positive growth. This was driven to a large extent by fiscal stimulus packages and government spending designed to provide financial relief to the financial sector and to increase aggregate demand. The ongoing effect of this has been mixed, with China, India, and European economies experiencing falling GDP growth in 2012. Renewed weaknesses in these economies are underpinned by falling fiscal spending, due to a highly leveraged public sector. Despite this developed economies in 2013 to date have recorded slightly improve GDP growth driven by a moderate recovery in jobs, liquidity in the financial markets and consumer confidence.

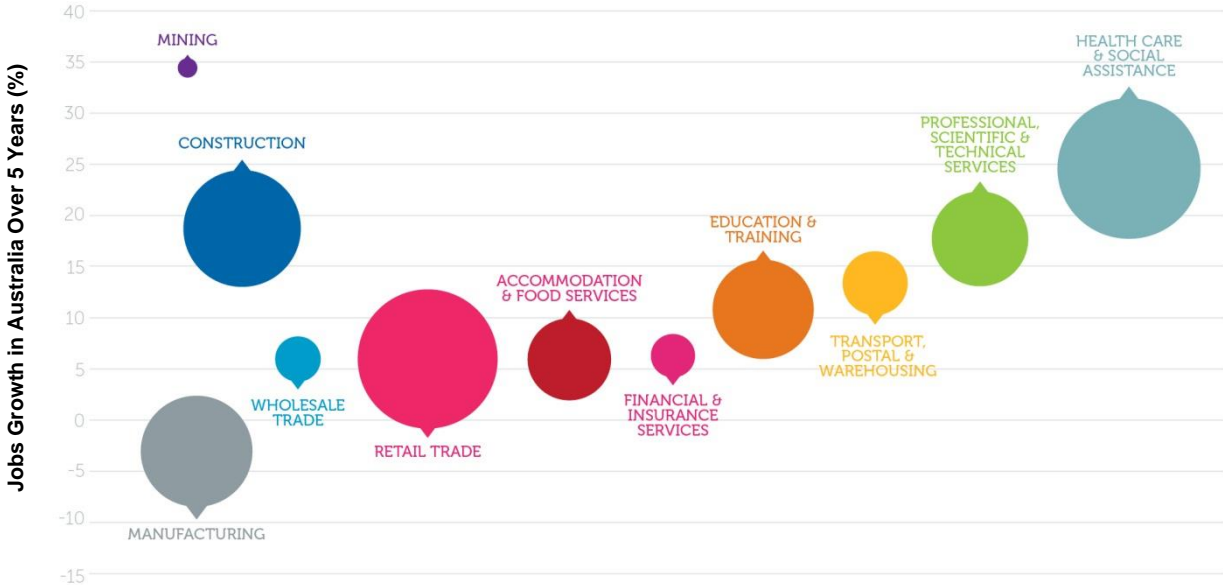
## 2.2 AUSTRALIAN ECONOMIC CONTEXT

While GDP growth has varied over the last 20 years, the make-up of Australia’s key industry sectors has undergone significant structural change. Figure 5 below illustrates the different industry sectors and their current size and historic growth rate over the previous 5 years.

Figure 5 shows that the fastest growing employment sector nationally is the mining sector, followed by the Health Care Sector. The size of the sectors however differ markedly, with Mining growing from a much smaller employment base (as indicated by the size of each industries respective circle), compared to the Health and Social Assistance Sector. Other sectors experiencing growth include Construction which follows Health Care and Social Assistance in its rate of growth, Accommodation and Food Services, Education and Training, Financial and Insurance Services, Wholesale Trade and Transport, Postal and Warehousing, and Professional Scientific & Technical Services.

The industries that contracted over this period include Manufacturing and Retail Trade. Traditionally Manufacturing has comprised a larger proportion of Australia’s employment base. This has changed markedly over the past 5 years, despite the fact that Manufacturing still comprises a significant but falling proportion of Australia’s employment base.

FIGURE 5 – NATIONAL ECONOMIC TRENDS

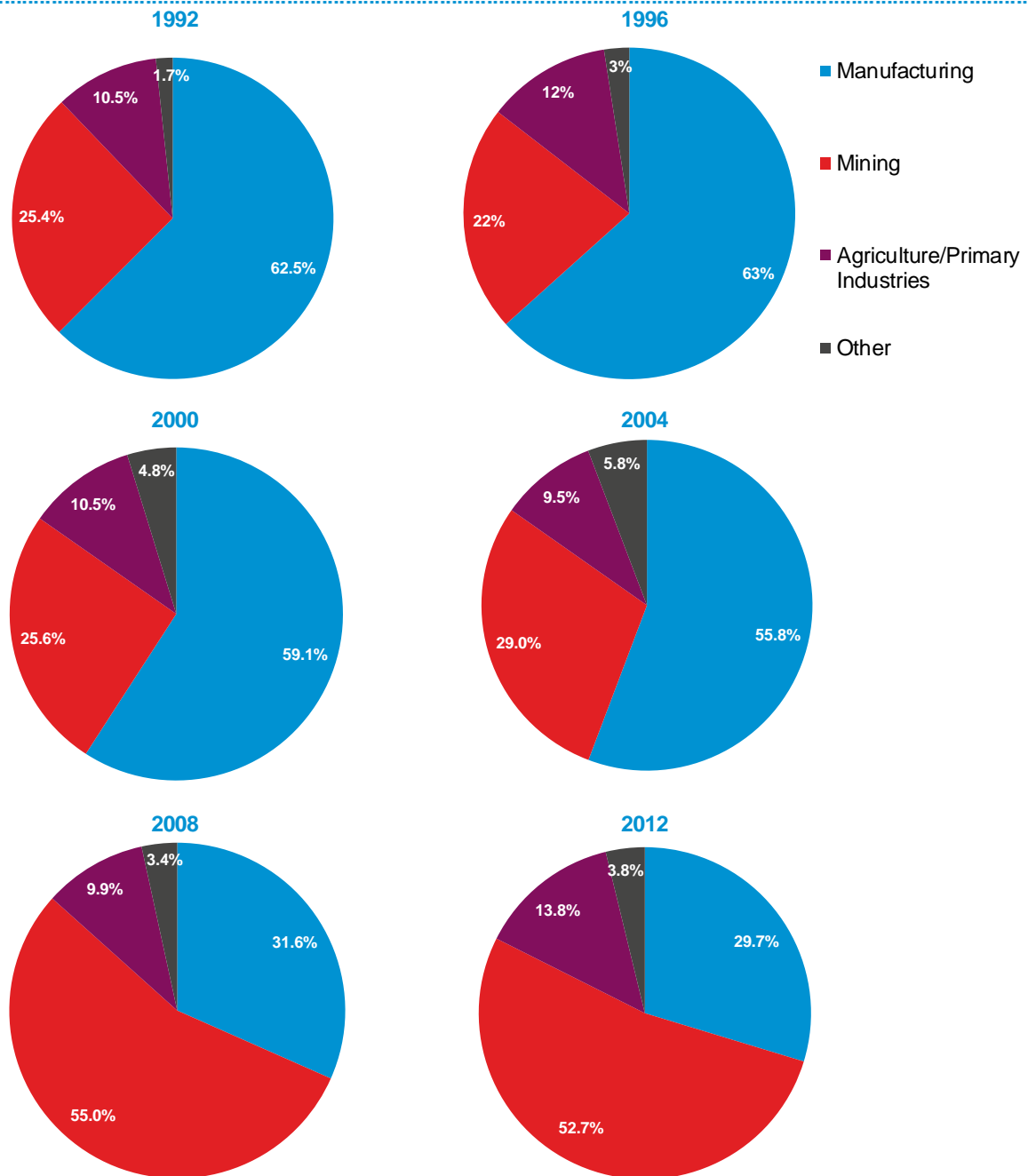


This ongoing structural shift in the Australian economy is reflected in composition of Australia’s exports, outlined in Figure 6 which shows the industry breakdown of Australia’s export since 1992. It shows that in the 90s manufacturing was still Australia’s main export industry, representing \$3.272 billion in 1992 and \$3.956 billion in 1996. It however represented a declining share of Australia’s exports, falling from 62.5% of Australia’s exports in 1992 to 29.7% in 2012. It was largely replaced by the mining sector in particular which increased its share of Australia’s exports from 25.4% (\$1.329 billion) in 1992 to 52.7% (\$10.475 billion) in 2012. This was largely driven by increases Coal and Metal Ore mining, each growing 46% per annum between 2004 and 2008.

FIGURE 6 – SHARE OF AUSTRALIAN EXPORTS

## Share of Australian Exports

MERCHANDISE EXPORTS AUSTRALIA 1992, 1996, 2000, 2004, 2008 AND 2012



Source: Urbis; ABS International Trade in Goods and Services 5368.0

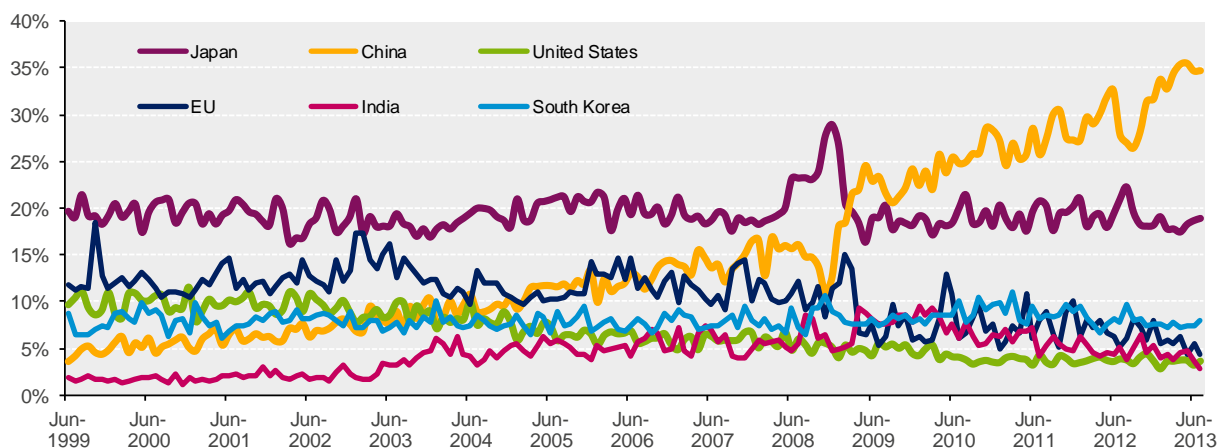
## 2.3 EXPORTS AND TRADE EXPOSED INDUSTRIES

The correction away from Australia's traditional manufacturing and agricultural led export market was partial driven primarily by the growth in the Chinese economy, and its demand for iron ore and thermal/coking coal. A large component of Australia's exports are purchased by the Chinese economy, as shown in Figure 7, the growth of which coincides with Australia's export increase and improvement in terms of trade (as shown in Figure 8). While comprising the largest share of Australian exports, Figure 7 also shows that Japan has historically and continues to comprise a large market for Australian exporters, purchasing between 15% and 20% of Australian exports. The EU and US represent a declining share of Australia's exports, and have been falling consistently since 2003 with the increasing share of China. India and Southern Korea comprise other growing export destinations.

FIGURE 7 – EXPORT BY DESTINATION

### Exports by Destination

SHARE OF TOTAL EXPORTS, 1999 TO 2013



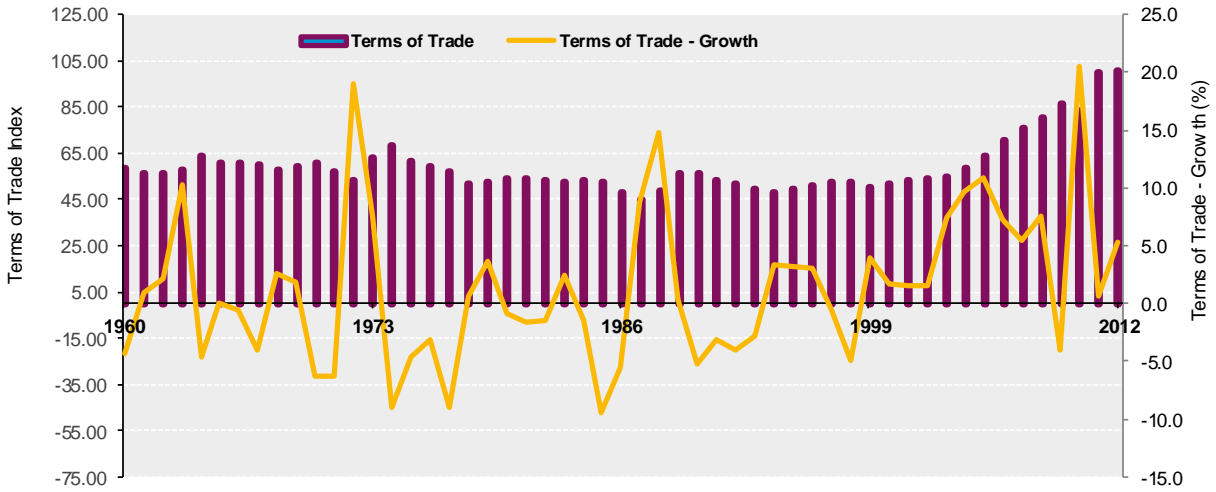
Source : Urbis; ABS International Trade in Goods and Services, Australia

In addition to the volume of trade exported to overseas markets, the price received by Australian businesses for these exports has a significant income affect. This is shown below in the growth in Australia's terms of trade in Figure 8. This measures the rate at which Australia's export prices grow relative to imports. Between 1998-99 and 2008-09, Australia's terms of trade have undergone a significant increase of 75%, reflecting changes in both the prices and the composition of traded goods and services. Export prices grew by 86% while import prices grew by just 9%. The rise in export prices was driven by increases in coal and metal ores while falls in prices of many manufactured goods helped keep prices of imports down.

FIGURE 8 – TERMS OF TRADE INDEX

## Terms of Trade Index

AUSTRALIA 1960 TO 2013



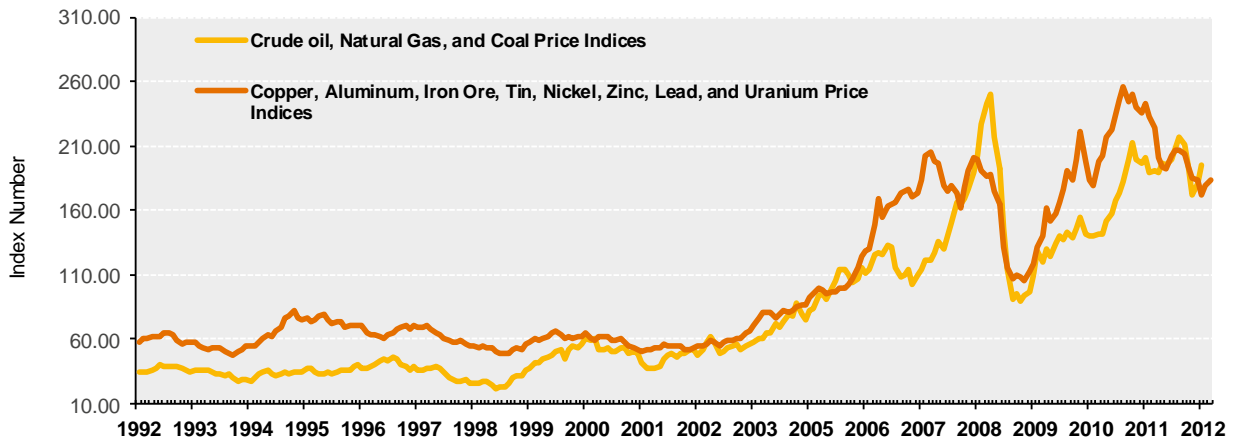
Source : Urbis; ABS, International Trade in Goods and Services, Australia, Sep 2012

Australia’s increase in terms of trade is correlated with two key economic trends – significant increases in commodity prices and an increase in demand for iron ore and coal by China. As illustrated in Figure 9 and Figure 10 commodity prices have increased significantly since 2004, leading to a subsequent increase in Australia terms of trade. Subdued commodity prices in 2011 were driven by sovereign debt issues in the European Union and only modest growth in the USA. In 2012, output growth in China slowed and China’s demand for resources eased. This comes via reduced demand for industrial output from industry sectors in our main trading partners. This has significant ramification for the Hunter Region’s industrial sectors, as China comprises the largest and fastest growing share of Australian exports.

FIGURE 9 – FUEL AND METAL PRICE INDICES

## Fuel and Metal Price Indices

1992 TO 2012

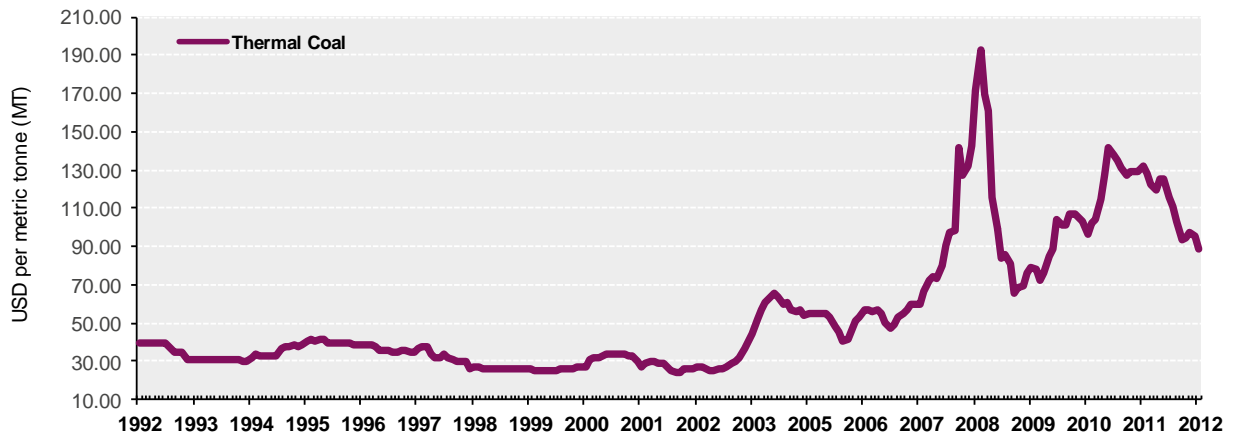


Source : Urbis; Reserve Bank of Australia, November 2012

FIGURE 10 – THERMAL COAL PRICES

## Thermal Coal Prices

AUSTRALIAN THERMAL COAL, 1992 TO 2012



Source : Urbis; Reserve Bank of Australia, November 2012

### 2.4 NSW ECONOMIC CONTEXT

The NSW economy grew at an annual rate of 2.62% from 1996 to 2011. This varied considerably between different periods. From 1996 to 2000 Gross State Product (GSP) grew by 3.43%, while GSP fell significantly with the onset of the 'dot-com' bubble in 2000 resulting in GSP's growth falling from 4.41% in 2000 to 1.76% in 2001.

From 2001 onwards the rate of growth increased marginally with an annual average growth rate of 1.9%, which fell significantly in 2009 with the Global Financial Crisis (GFC), affecting the global economy and the availability of capital markets to local businesses.

Unemployment has broadly correlated with GSP growth. In 2001 unemployment spiked from 5.2% in 2000 to 6.3% in 2001, following the fall of GSP growth. This had followed a period of consistent improvement in unemployment.

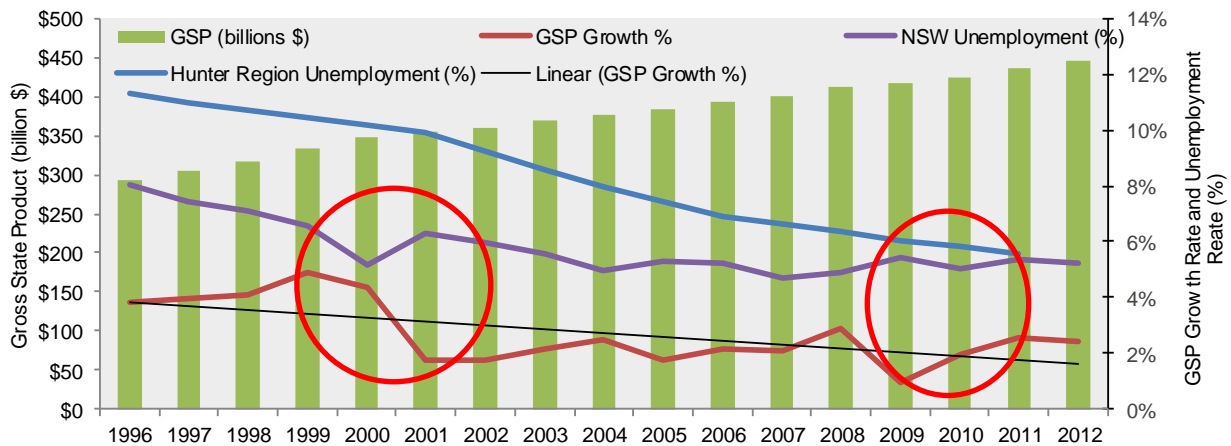
Unemployment has trended downwards from 6.3% in 2001 to 4.9% in 2008. The resulting impact of the GFC on NSW's GSP again resulted in a like response in NSW's unemployment rate, increasing to 5.4%. Since 2009 it has varied between 5% and 5.4%.

This differs significantly from the Hunter Region's unemployment rate over this period. While falling slowly from 1996 to 2001, it fell significantly from 2001 onwards, with the onset of increasing mining investment in the region, and growing mining sector employment. The unemployment rate for the Hunter Region is based on census data, removing the year-year fluctuations, however does show that over 4 year periods it has fallen significantly quicker than the rest of NSW.

FIGURE 11 – GROSS STATE PRODUCT AND UNEMPLOYMENT

## Gross State Product<sup>1</sup> and Unemployment

NSW AND THE HUNTER REGION 1996 TO 2012



1. Gross State Product, Chain Volume Measure, available until 2011 only

2. Hunter Region unemployment derived from CAGR % between census years (1996, 2001, 2006 and 2011), does not include 2012

Source : Urbis; ABS Australia National Accounts, State of Accounts 2010-2011

Over this period the structure of the NSW economy has changed significantly as well. In 1996 the economy relied heavily on the manufacturing sector which comprised 12.1% of GSP. Since 1996 the following industries have increased their share of the NSW GSP:

- The financial services and construction sectors have increased their share from 9.2% to 14.5% in 2011
- The construction sector increased from 4.9% to 6.3% in 2011
- Professional, scientific and technical services increased from 6.8% to 7.5% in 2011
- The health care and social assistance sector grew slightly from 5.5% in 1996 to 5.9% in 2011.

Over this period a number of industry sectors have come to represent a smaller proportion of the NSW GSP, indicating a relative decline in terms of GSP. The industries that showed significant falls in share of GSP include:

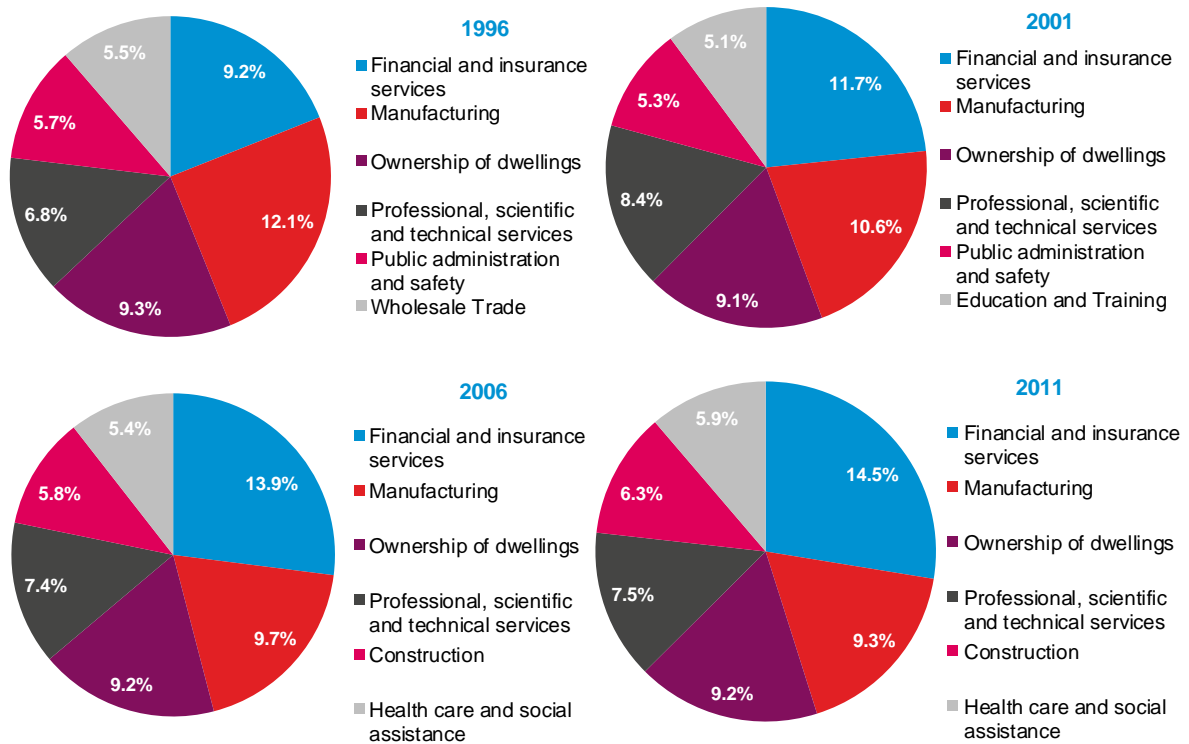
- Manufacturing which fell from 12.1% of GSP to 9.3% by 2011
- Public administration and safety which fell from 5.7% to 4.9% by 2011
- Wholesale trade which fell from 5.5% to 4.6% in 2011
- Public Administration and Wholesale Trade due to their falling share of GSP, are no longer a top 5 industry sector in terms of GSP).



FIGURE 12 – NSW KEY INDUSTRY SECTORS

## Key Industry Sectors

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



Source : Urbis; ABS Australia National Accounts, State of Accounts 2010-2011

1 Gross State Product, Chain Volume Measure

This represents the ongoing shift from an industrial/manufacturing based economy to a services base economy. This structural shift in the NSW economy from labour intensive and trade exposed sectors to a more serviced based economy is reflected in the performance of the Hunter Region’s manufacturing sector. The key difference is the economic performance and growth attributed to the mining sector, with the Hunter Region comprising a large endowment of the State’s coal resources.

## 2.5 INDUSTRIAL SECTOR – EMPLOYMENT GROWTH

The performance of the manufacturing; construction; mining; wholesale trade; transport and storage; and electricity, gas and water supply industries (because these industries typically occupy industrial land) provide an indication of the employment drivers behind the demand for industrial land. A review of their employment base will be conducted as an indication of prospective future demand for employment lands; and its existing industrial employment base.

### 2.5.1 OVERVIEW

There is a broad shift in economic structure occurring not just in the Hunter Region but nationally, from traditional industrial based employment to professional services and higher order employment. Other non-industrial based employment such as the education and health care sectors are also growing rapidly, however can be attributed more to the Lower Hunter region’s ageing demographic and growing population.

The manufacturing sector regionally will continue to comprise a reducing smaller proportion of overall employment share, however will continue to be a major employer within the region. This will not be consistent across all types of manufacturing with a number of manufacturers tied to residential construction which will continue to expand in line with population growth and household formation growth. Manufacturers that face competition from abroad or rely on export markets will continue to be constrained by a historically strong Australian dollar and international operating cost disparity.

The construction sector will be supported by ongoing population growth, slightly above what was seen between 2001 and 2011, specifically benefiting residential construction businesses and furniture and fabricated metal manufacturers. Civil engineering and non-residential construction will be supported by a strong infrastructure project pipeline.

The wholesale trade industry is contracting at the Regional level, and this will have dampening effect on demand for industrial land in the region. However, wholesale trade of building materials is likely to grow in line with construction industry growth.

The extent to which the mining sector will continue to grow will be determined largely by commodity prices, and capital investment into new mining projects. Despite moderating commodity prices, the mining sector has an investment pipeline that will support future mining employment and servicing industries, likely to be maintained if commodity prices do not fall significantly. Given the variable nature of commodity prices however and factors impacting our employment forecasts for the mining sector will factor in estimated employment derived from existing projects forming Urbis have taken a moderate view on the growth potential for the mining sector in the Lower Hunter over the medium to long term.

## 2.5.2 MINING SECTOR

In the Lower Hunter Region the Newcastle LGA has the largest proportion of mining sector employment, largely in coal mining, with 1,572 jobs representing 47% of the Lower Hunters total mining sector employment. Other Lower Hunter LGAs, specifically Port Stephens, Cessnock and Maitland have similar levels of mining sector employment, driven by a diverse range of mining sub-sectors. These include:

- Port Stephens, driven primarily by Coal Mining which comprises 86% of its mining sector employment
- Cessnock mining sector employment is spread across coal mining which comprises 245 jobs in coal mining, representing 45.9% of jobs in the Cessnock mining sector and 123 jobs in the exploration and mining support services sector, representing 23% of mining sector employment
- Maitland mining sector is comprised of both coal mining with 118 jobs, with the highest amount of mining jobs in the non-metallic mineral mining and quarrying sector with 245 representing 46% of its mining sector employment.

The Port of Newcastle's 2011-2012 Annual Report predicts that coal export volume will increase from 121.9 million tonnes to 250 million tonnes by 2020, a total increase of 128.1 million tonnes. This coincides with ongoing investment in mining projects as outlined in Table 6, showing that the majority of projects are black coal and likely to support continued export volumes through the Port of Newcastle. The estimated increase in coal production volume is 61.8 million tonnes per annum once all new projects come online by 2017, representing 48% of the Port of Newcastle's expected increase in coal export volume. This does not account for coal production consumed locally. The Port of Newcastle Corporation expects this to be driven by future growth markets in Asia such as Taiwan and Korean.

Further expansion in coal port capacity will be needed to facilitate this export growth. In New South Wales, an additional 13 million tonnes of coal loading capacity is expected to become available at the Newcastle Coal Infrastructure Group's terminal in 2014, while plans for stage one of the Terminal Four expansion at Kooragang Island involve lifting capacity by 70 million tonnes by 2017.

There are a number of factors to consider when reviewing the ongoing demand for Australian raw materials and the Hunter Regions terms of trade and export growth include:

- Soft growth in GDP amongst key trading partners
- The continued downward economic correction in the EU undermining global economic confidence
- A high Australian dollar. With black coal prices set in US dollars the stronger the Australian dollar the lower the revenue returns received on coal exports. Strength in the Australian dollar is likely to be maintained supported by its perception as a 'safe' currency supported by the International Monetary Fund (IMF) decision to name it an office 'reserve currency'

- Growth in demand for electricity generation, and ongoing population growth in developing countries, reliant on thermal coal (e.g. India)
- Diversification of energy sources from coal to renewable or natural gas (e.g. Japan).

According to IBIS World the mining sector generated revenue of \$162.6 billion in 2007-2008, and is expected to yield revenue of \$237 billion in 2012-2013. Strong mining output from Australia is expected to underpin growth in revenue amounting to about 5.5% per year, reaching \$324.7 billion in 2017-18. Coal output nationally is expected to continue growing, rising from about 412 million tonnes in 2012-13 to about 555 million tonnes by 2017-18. Rising output is expected to provide the basis for employment growth averaging 2.9% per year nationally. However rising production volumes worldwide for a range of mineral commodities are expected to produce flat commodity price over the five years through 2017-18. Rather than a looming crash, the sector is expected to maintain its share of Australian exports; however it is unlikely that significant growth in commodity prices will occur.

TABLE 6 – MINING SECTOR EMPLOYMENT

## Mining Sector Employment

LOWER HUNTER, 2006 TO 2011

Mining Sector	2006						2011						Annual growth rate 2006 to 2011 (%)	Total Change 2006 to 2011 (No.)
	Newcastle	Lake Macquarie	Port Stephens	Cessnock	Maitland	Total	Newcastle	Lake Macquarie	Port Stephens	Cessnock	Maitland	Total		
Coal Mining	103	1084	10	229	139	1,565	339	1284	7	518	245	2,393	8.9%	828
Oil and Gas Extraction	4	0	0	0	0	4	7	3	3	0	8	21	39.3%	17
Metal Ore Mining	9	0	19	0	3	31	11	4	19	0	7	41	5.8%	10
Non-Metallic Mineral Mining and Quarrying	6	11	47	5	36	105	53	3	46	13	32	147	7.0%	42
Exploration and Other Mining Support Services	40	80	4	22	52	198	115	149	27	36	123	450	17.8%	252
Mining, nfd	76	101	44	31	110	362	105	129	34	32	118	418	2.9%	56
<b>Total</b>	<b>238</b>	<b>1,276</b>	<b>124</b>	<b>287</b>	<b>340</b>	<b>2,265</b>	<b>630</b>	<b>1,572</b>	<b>136</b>	<b>599</b>	<b>533</b>	<b>3,470</b>	<b>8.9%</b>	<b>1,205</b>

Source : ABS Census 2006 and 2011; Urbis

### 2.5.3 MANUFACTURING

As discussed previously, the manufacturing sector comprises a declining share of NSW's GSP and exports since 1996. In 2011 the manufacturing sector comprised 10.9% of the Hunter Regions total jobs down from 12.2% in 2001. Despite comprising a falling proportion of employment in the Lower Hunter Region, the manufacturing sector in the added 668 manufacturing jobs.

More recently, a high Australian dollar, interest rates and lower consumer confidence has resulted in a fall in employment in the manufacturing sector nationwide.

It is also a highly diverse industry sector, with varying degrees of economic growth, depending on their exposure to different industries. Table 7 illustrates this showing the shifting manufacturing base within the Hunter between 2006 and 2011. A breakdown of this is not available for 2001, however it still shows structural changes within the manufacturing sector that will impact the total quantum of industrial land demanded in the Hunter Region through to 2031

While the manufacturing sector overall has fallen as a proportion of total employment within the Hunter Region, a number of different types of manufacturers have increased their employment base between 2006 and 2011. Table 7 illustrates the following:

- The Lower Hunter region accommodates the vast majority of the Hunter Regions manufacturing sector, and added 668 jobs between 2006 and 2011
- There was a significant increase in beverage and tobacco manufacturing between 2006 and 2011, adding an additional 1,924 jobs over this period, with Newcastle and Lake Macquarie gaining 982 and 1,039 jobs respectively. This came at the expense of Cessnock which lost 392 jobs in this sector over this period
- Fabricated and metal product manufacturing increased between 2006 and 2011 from 2,368 to 4,574, representing growth of 13% per annum over this period, with Port Stephens, Newcastle and Cessnock adding the most jobs in this sector over this period
- Transport and equipment manufacturing increased from 1,749 to 2,127 representing 4% annual growth in this industry sector; likely driven by train manufacturing, with projects such as the assembly of the pre-production test train for CityRail, estimated to have added 471 new jobs to the region
- Furniture and other manufacturing increase from an employment base of 517 to 4,019 over this period representing 51% annual growth between 2006 and 2011. This sector is driven by residential development and the subsequent household formation. Cessnock was the only LGA in the Lower Hunter that did not receive a large uplift in employment within this sector
- The largest reduction in the manufacturing sector came in the primary metal and metal product manufacturing sector falling from 4,951 employees to 746 employees in 2011, an annual fall of 32%. This trend has continued with the closure of Hydro's Aluminium's Kurri Kurri smelter in September 2012. High energy costs and a low US dollar were cited as the two key reasons behind this closure
- Machinery and equipment manufacturing fell from 3,589 in 2006 to 2,599 in 2011, falling by 7% per annum
- Food product manufacturing fell from 2,882 to 1,819 jobs in 2011, representing a fall of 9% per annum

It would be expected that trade exposed manufacturing sectors will continue to face challenging economic conditions with a higher exchange rate, competition from low cost competitors overseas. Manufacturers servicing a local market, tied to increasing population and household formation however are likely to continue to increase their employment and capacity, in line with future population growth across Hunter Region LGAs. The availability of industrial land well connected to key transport routes and close to their market will likely drive the location of these businesses.

TABLE 7 – MANUFACTURING SECTOR EMPLOYMENT

## Manufacturing Sector Employment

LOWER HUNTER, 2006 TO 2011

Manufacturing Sector	2006						2011						Annual growth rate 2006 to 2011 (%)	Total Change 2006 to 2011 (No.)
	Newcastle	Lake Macquarie	Port Stephens	Cessnock	Maitland	Total	Newcastle	Lake Macquarie	Port Stephens	Cessnock	Maitland	Total		
Food Product Manufacturing	881	1,088	72	131	206	2,378	505	475	261	86	221	1,548	-8%	-830
Beverage and Tobacco Product Manufacturing	23	57	7	518	14	619	1,005	1,096	101	126	215	2,543	33%	1,924
Textile, Leather, Clothing and Footwear Manufacturing	172	123	40	106	83	524	68	23	17	485	11	604	3%	80
Wood Product Manufacturing	154	371	199	60	90	874	163	122	24	19	87	415	-14%	-459
Pulp, Paper and Converted Paper Product Manufacturing	30	11	0	11	8	60	165	259	153	55	80	712	64%	652
Printing (including the Reproduction of Recorded Media)	202	65	17	3	39	326	27	8	0	0	7	42	-34%	-284
Petroleum and Coal Product Manufacturing	97	19	0	3	30	149	145	50	17	11	52	275	13%	126
Basic Chemical and Chemical Product Manufacturing	481	103	38	126	125	873	89	22	10	4	34	159	-29%	-714
Polymer Product and Rubber Product Manufacturing	101	138	58	22	30	349	469	82	51	172	147	921	21%	572
Non-Metallic Mineral Product Manufacturing	219	231	103	34	262	849	142	118	44	22	41	367	-15%	-482
Primary Metal and Metal Product Manufacturing	2,183	532	1,330	688	218	4,951	215	202	92	40	197	746	-32%	-4,205
Fabricated Metal Product Manufacturing	1,038	727	333	89	182	2,369	2,023	460	1,310	641	140	4,574	14%	2,205
Transport Equipment Manufacturing	1,037	236	432	12	32	1,749	813	708	330	74	202	2,127	4%	378
Machinery and Equipment Manufacturing	830	1,085	850	80	398	3,243	1,116	585	711	16	39	2,467	-5%	-776
Furniture and Other Manufacturing	188	205	67	17	40	517	1,304	989	1,087	76	563	4,019	51%	3,502
Manufacturing, nfd	485	407	242	108	244	1,486	197	138	94	8	28	465	-21%	-1,021
<b>Total</b>	<b>8,121</b>	<b>5,398</b>	<b>3,788</b>	<b>2,008</b>	<b>2,001</b>	<b>21,316</b>	<b>8,446</b>	<b>5,337</b>	<b>4,302</b>	<b>1,835</b>	<b>2,064</b>	<b>21,984</b>	<b>0.6%</b>	<b>668</b>

Source: ABS Census 2006 and 2011; Urbis

## 2.5.4 TRANSPORT, POSTAL & WAREHOUSING

The transport, postal and warehousing sector provides essential services and employs approximately 606,200 workers nationally in 2011 - 12. In terms of industry value added, the transport, postal and warehousing industry contributed 5.1 per cent (\$69.8b) to the Australian economy in 2011-12. The transport, postal and warehousing industries underpin a diverse range of industries and activities. These range from transporting and storing freight, to the movement of people by private and public transport, to vehicle hire and the use of pipelines. It is an industry sector that is highly dependent on transport infrastructure, whether that is road, rail, port or air transport based.

Figure 13 identifies the main contributors to employment growth within this industry sector, across Lower Hunter LGAs. Between 2006 and 2011 the following industry trends were observed:

- Newcastle contains the largest proportion of Transport, postal and warehousing employees, growing from 3,968 to 4,556 jobs
- This was focused primarily in Road and Rail Transport sectors, which employed 1,319 and 1,508 jobs respectively in 2011
- The Road and Rail Transport sector has the largest proportion of jobs across all LGAs comprising 3,967 out of 8,523 jobs across all Transport, Postal and Warehousing industry jobs for the Lower Hunter
- Cessnock has traditionally represented a low proportion of the Lower Hunters employment within the Transport, Postal and Warehousing industry sector, likely due to its main industrial precincts location relative to the New England Highway
- The construction of the Hunter Expressway will provide the lead infrastructure necessary to provide industrial in close proximity to interchanges with the locational advantages to attract more Road Transport employment to Cessnock
- In addition to this, a rail servicing yard, or intermodal type facility will likely provide the type of infrastructure needed to expand this industry sector within Cessnock, and attract Transport, Postal and Warehousing businesses that need this type of infrastructure to operate

FIGURE 13 – TRANSPORT, POSTAL AND WAREHOUSING

## Transport, Postal & Warehousing

LOWER HUNTER, 2006 TO 2011

Transport, postal & warehousing	2006						2011						Annual growth rate 2006 to 2011 (%)	Total Change 2006 to 2011 (No.)
	Newcastle	Lake Macquarie	Port Stephens	Cessnock	Maitland	Total	Newcastle	Lake Macquarie	Port Stephens	Cessnock	Maitland	Total		
Transport, Postal and Warehousing, nfd	66	26	7	5	14	118	35	31	8	3	8	85	-6.4%	-33
Road Transport	1,262	1,036	473	273	666	3,710	1,319	1,170	478	284	716	3,967	1.3%	257
Rail Transport	1,224	31	0	3	74	1,332	1,508	57	4	0	77	1,646	4.3%	314
Water Transport	35	3	27	3	3	71	23	3	16	5	3	50	-6.8%	-21
Air and Space Transport	28	10	145	7	5	195	9	13	176	10	3	211	1.6%	16
Other Transport	10	17	35	8	0	70	18	8	43	15	3	87	4.4%	17
Postal and Courier Pick-up and Delivery Services	491	301	72	61	100	1,025	637	216	71	52	96	1,072	0.9%	47
Transport Support Services	753	78	148	9	25	1,013	872	103	193	4	12	1,184	3.2%	171
Warehousing and Storage Services	99	40	23	7	17	186	135	57	13	6	10	221	3.5%	35
<b>Total</b>	<b>3,968</b>	<b>1,542</b>	<b>930</b>	<b>376</b>	<b>904</b>	<b>7,720</b>	<b>4,556</b>	<b>1,658</b>	<b>1,002</b>	<b>379</b>	<b>928</b>	<b>8,523</b>	<b>2.0%</b>	<b>803</b>

Source : ABS Census 2006 and 2011; Urbis



## 2.5.5 ELECTRICITY, GAS, WATER AND WASTE SERVICES SECTOR

The largest proportion of this sectors employment is in electricity supply, which consists of the generation, transmission and distribution of electricity. Within this, distribution and generation are most labour intensive, representing the highest employment base in this industry sector. In terms of generation, according to the NSW Minerals Council 89% of the total electricity needs in NSW are met with locally mined thermal coal. A breakdown of energy sources are supplied by the NSW Minerals Council below (GWh) for NSW in 2010 providing an indicative breakdown of energy sources:

- Hydro; 1,679.3 GWh;
- Steam 64,395.7 GWh;
- Gas turbine 521.2 GWh;
- Combined cycle 3,399.8 GWh;
- Wind 410.7 GWh.

Hunter Region generators as would be expected are mainly coal fired generators, leveraging the regions natural endowment in coal.

TABLE 8 – ENERGY GENERATORS

### Energy Generators

EXISTING AND PROPOSED, HUNTER

Existing	Technology	Capacity (MW)]
Ering Lower Hunter Eraring Energy	Steam/Coal	<b>2,820</b>
Bayswater Hunter Macquarie Generation	Steam/Coal	<b>2,720</b>
Liddell Hunter Macquarie Generation	Steam/Coal	<b>2,080</b>
Redbank Hunter Redbank Project Coal Tailings	Coal Tailings	<b>145</b>
<b>Projects With Development Approval</b>		
Kyoto Energy Park Upper Hunter Pamada	Wind	102
	Solar	10
	Hydro	1
	<b>Total</b>	<b>113</b>
Ering Upgrade	Coal	<b>60</b>
Tomago	OCGT/CCGT	<b>790</b>
Gloucester Gas Project	CSM	<b>15</b>

Source: NSW Government Trade and Investment; Urbis

This is reflected in the proportion of jobs focused in the fossil fuel generated electricity supply. According to 2006 and 2011 census data fossil fuel generated energy supply represents 97% of this sectors employment base in 2006 and 96% in 2011 within the Hunter Region. This is primarily located in Lake Macquarie (381 jobs in 2011) in the Lower Hunter Region. Electricity distribution represents the largest proportion of employment which are primarily based in the Newcastle LGA and consisted of 1045 jobs in 2011, representing 74% of the Hunter Regions electricity generation employment.

Proposed upgrades and new power generators are expected to yield an increase in capacity of 978 MW. This will also increase employment from this sector as these generators become operational.

TABLE 9 – ELECTRICITY, GAS, WATER AND WASTE SECTOR EMPLOYMENT

## Electricity, Gas, Water and Waste Sector Employment

LOWER HUNTER, 2006 TO 2011

	2006						2011						Annual growth rate 2006 to 2011 (%)	Total Change 2006 to 2011 (No.)
	Newcastle	Lake Macquarie	Port Stephens	Cessnock	Maitland	Total	Newcastle	Lake Macquarie	Port Stephens	Cessnock	Maitland	Total		
Electricity, Gas, Water and Waste Services, nfd	7	0	0	0	3	10	3	0	0	0	0	3	-21%	-7
Electricity Supply	1197	408	8	14	115	1,742	1518	484	24	16	155	2,197	5%	455
Gas Supply	13	6	0	0	0	19	7	31	0	0	9	47	20%	28
Water Supply, Sewerage and Drainage Services	393	31	24	3	24	475	426	28	27	4	20	505	1%	30
Waste Collection, Treatment and Disposal Services	113	103	67	21	108	412	188	145	105	28	165	631	9%	219
<b>Total</b>	<b>1,723</b>	<b>548</b>	<b>99</b>	<b>38</b>	<b>250</b>	<b>2,658</b>	<b>2,142</b>	<b>688</b>	<b>156</b>	<b>48</b>	<b>349</b>	<b>3,383</b>	<b>4.9%</b>	<b>725</b>

Source : ABS Census 2006 and 2011; Urbis

## 2.5.6 CONSTRUCTION SECTOR EMPLOYMENT

The construction industry is a major employment sector in Australia, employing 996,800 people or 8.7% of the total workforce as of May 2012. Employment in the construction sector is largely driven by 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.

The Lower Hunter Region's construction sector has grown by 1,461 jobs between 2006 and 2011, equating to an annual growth rate of 2.4% with total employment growing from 11,671 in 2006 to 13,132 jobs in 2011.

Table 10 shows the breakdown of the construction industry and demonstrates that the majority of employment is focused in residential construction consisting of 2,079 jobs compared to 1,029 non-residential construction jobs in 2011 for the Lower Hunter Region. This trend moderated slightly between 2006 and 2011, with residential construction employment falling from 2,274 in 2006 to 2,079 in 2011, while heavy and civil engineering construction grew from 1,223 to 2,181 between 2006 and 2011 and non-residential construction increased from 592 jobs in 2006 to 1,029 in 2011. While the building installation services sector, increasing its employment base 3,047 jobs in 2006 to 3,700 jobs in 2011.

It is worth noting that most workers employed in the building installation services and building completion services work on residential projects. The demographic review of the Lower Hunter Region outlined in section indicates that population growth will continue at a similar pace to what was observed between 2001 and 2011, with a slightly higher annual growth rate between 2011 and 2016, indicating an expectation of positive employment growth in residential construction.

Demand for housing will continue at a similar pace as observed between 2001 and 2011, with overall housing demand being between 2,375 dwellings and 3,000 dwellings per annum from 2011 to 2031. This is broken up as between 2,000 to 2,560 dwellings per annum expected to be located in the Lower Hunter Region. It is expected that continued population growth will support continued underlying housing demand, and the residential construction sector.

In terms of non-residential construction activity, heavy and civil engineering employment increased likely driven by both new infrastructure works and heavy engineering construction services required by the mining sector and major infrastructure upgrades such as the Hunter Expressway.

TABLE 10 – CONSTRUCTION SECTOR EMPLOYMENT

## Construction

LOWER HUNTER, 2006 TO 2011

	2006					Number of Jobs	2011					Annual growth rate 2006 to 2011 (%)	Total Change 2006 to 2011 (No.)	
	Newcastle	Lake Macquarie	Port Stephens	Cessnock	Maitland		Newcastle	Lake Macquarie	Port Stephens	Cessnock	Maitland			Number of Jobs
Residential Building Construction	747	799	281	137	310	2,274	682	687	260	99	351	2,079	-1.8%	-195
Non-Residential Building Construction	278	115	94	21	84	592	483	126	106	153	161	1,029	11.7%	437
Heavy and Civil Engineering Construction	550	298	85	74	216	1,223	1,061	391	143	223	363	2,181	12.3%	958
Construction Services, nfd	43	32	13	6	7	101	42	45	9	7	5	108	1.3%	7
Land Development and Site Preparation Services	173	151	93	83	139	639	150	177	91	101	121	640	0.0%	1
Building Structure Services	306	382	154	65	104	1,011	215	390	118	54	132	909	-2.1%	-102
Building Installation Services	943	1,007	317	120	270	2,657	1,168	1,140	426	159	313	3,206	3.8%	549
Building Completion Services	498	688	166	115	182	1,649	432	512	171	94	186	1,395	-3.3%	-254
Other Construction Services	214	269	108	50	95	736	229	326	141	60	100	856	3.1%	120
Construction, nfd	134	100	54	15	39	342	113	95	48	27	32	315	-1.6%	-27
Building Construction, nfd	204	105	53	28	57	447	159	119	49	30	57	414	-1.5%	-33
<b>Total</b>	<b>4,090</b>	<b>3,946</b>	<b>1,418</b>	<b>714</b>	<b>1,503</b>	<b>11,671</b>	<b>4,734</b>	<b>4,008</b>	<b>1,562</b>	<b>1,007</b>	<b>1,821</b>	<b>13,132</b>	<b>2.4%</b>	<b>1,461</b>

Source : ABS Census 2006 and 2011; Urbis

## 2.6 RESIDENT POPULATION DEMOGRAPHICS

### 2.6.1 RESIDENT DEMOGRAPHIC PROFILE

This section considers the demographic and population drivers behind demand for different types of employment land. It addresses the connection between resident population, workforce and employment growth. It provides an indication of the type of workforce available to businesses relocating onto the subject site.

### 2.6.2 POPULATION FORECASTS

The Lower Hunter's population is expected to grow from 540,100 people in 2011 to 669,600 people in 2031. Table 11 outlines how each LGA within the Lower Hunter will grow, with Newcastle growing 24%, Lake Macquarie 12%, Port Stephens 36%, Cessnock 28% and Maitland 42%. This indicates that Maitland and Port Stephens is predicted to deliver the greatest change in resident population, the Lower Hunter Region will have an average change in resident population of 1,295 people per annum til 2031.

TABLE 11 – LOWER HUNTER REGION POPULATION FORECASTS

## Lower Hunter Region Population Projections

HISTORICAL AND FORECAST POPULATION 2001 TO 2031

LGA	Estimated Resident Population						
	2001	Historic		Forecast			
		2006	2011	2016	2021	2026	2031
Newcastle	142,100	149,300	154,800	164,800	174,200	183,400	192,500
Lake Macquarie	187,800	192,000	196,000	199,900	206,900	213,500	219,600
Port Stephens	59,000	63,300	67,200	74,700	80,400	86,000	91,200
Cessnock	47,100	48,300	52,600	56,100	60,000	63,800	67,400
Maitland	46,500	64,700	69,500	77,400	84,700	92,000	98,900
<b>Lower Hunter</b>	<b>482,500</b>	<b>517,600</b>	<b>540,100</b>	<b>572,900</b>	<b>606,200</b>	<b>638,700</b>	<b>669,600</b>

LGA	Annual Change in Resident Population (% CAGR)						
	Historic		Forecast				
	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	
Newcastle	1.0%	0.7%	1.3%	1.1%	1.0%	1.0%	
Lake Macquarie	0.4%	0.4%	0.4%	0.7%	0.6%	0.6%	
Port Stephens	1.4%	1.2%	2.1%	1.5%	1.4%	1.2%	
Cessnock	0.5%	1.7%	1.3%	1.4%	1.2%	1.1%	
Maitland	6.8%	1.4%	2.2%	1.8%	1.7%	1.5%	
<b>Lower Hunter</b>	<b>1.5%</b>	<b>0.9%</b>	<b>1.2%</b>	<b>1.2%</b>	<b>1.1%</b>	<b>1.0%</b>	

LGA	Average Annual Change in Resident Population						
	Historic		Forecast				
	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	
Newcastle	1,440	1,100	2,000	1,880	1,840	1,820	
Lake Macquarie	840	800	780	1,400	1,320	1,220	
Port Stephens	860	780	1,500	1,140	1,120	1,040	
Cessnock	240	860	700	780	760	720	
Maitland	3,640	960	1,580	1,460	1,460	1,380	
<b>Lower Hunter</b>	<b>7,020</b>	<b>4,500</b>	<b>6,560</b>	<b>6,660</b>	<b>6,500</b>	<b>6,180</b>	

Source : ABS; NSW Department of Planning & Infrastructure 2013 ; Urbis

### 2.6.3 AGE DISTRIBUTION

Table 12 provides an indication of the relative size of different age cohorts in the Hunter and Lower Hunter regions and LGAs within the area. Lake Macquarie and Port Stephens accommodate the highest proportion of retiree (65+) residents, while Newcastle has the highest proportion of working age residents. Port Stephens, Cessnock and Maitland have the largest proportion of 'Youth' (0-15) residents, indicating the presence of family households, with children.

TABLE 12 – AGE DISTRIBUTION

#### Age Distribution

HUNTER REGION, 2011

LGA	Hunter Region	Lower Hunter Region	Newcastle	Lake Macquarie	Port Stephens	Cessnock	Maitland
0-14 (Youth)	19%	19%	17%	19%	20%	21%	22%
15-65 (Working Age)	64%	64%	67%	63%	61%	64%	65%
65+ (Retiree)	17%	17%	16%	18%	19%	14%	13%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source : ABS; NSW Department of Planning ; Urbis

### 2.6.4 INCOME

The income profile of Lower Hunter Region LGAs in 2011, range from an average income of \$68,745 in Port Stephens to \$82,950 in Maitland, as highlighted in Table 13 below. Income distribution indicates a consistent trend across all areas with the \$78,000-\$104,000 and \$20,800-\$31,000 groups representing the greatest income distributions and Neg/Nil and \$1-\$10,400 groups representing the least. The average annual income in the areas listed (\$75,662) is greater than that of Non-Metro NSW (\$67,788) due to the Hunter region's association with the mining industry.

TABLE 13 – INCOME DISTRIBUTION

#### Income Distribution

LOWER HUNTER REGION LGAs, 2011

	Cessnock	Lake Macquarie	Maitland	Newcastle	Port Stephens	Total
\$Neg/Nil	1.3%	1.0%	0.9%	1.1%	1.1%	1.1%
\$1-\$10,400	1.6%	1.4%	1.2%	1.6%	1.5%	1.5%
\$10,400-\$15,600	3.5%	2.9%	2.5%	3.9%	3.1%	3.2%
\$15,600-\$20,800	9.4%	8.7%	7.6%	9.3%	8.6%	8.8%
\$20,800-\$31,200	12.7%	12.5%	10.4%	10.8%	14.2%	11.9%
\$31,200-\$41,600	11.2%	10.4%	9.4%	9.4%	11.4%	10.2%
\$41,600-\$52,000	8.6%	9.0%	8.2%	8.3%	10.1%	8.8%
\$52,000-\$65,000	8.5%	8.4%	8.6%	8.6%	8.9%	8.6%
\$65,000-\$78,000	7.7%	7.4%	7.6%	7.6%	8.2%	7.6%
\$78,000-\$104,000	12.1%	12.3%	13.4%	12.4%	12.1%	12.4%
\$104,000-\$130,000	7.9%	8.9%	9.7%	9.1%	8.2%	8.9%
\$130,000-\$156,000	7.7%	7.5%	9.5%	8.0%	6.2%	7.7%
\$156,000-\$182,000	4.4%	4.8%	5.4%	5.0%	3.2%	4.7%
\$182,000-\$208,000	1.5%	2.1%	2.6%	2.1%	1.4%	2.0%
\$208,000 plus	1.9%	2.6%	2.9%	2.9%	1.7%	2.6%
<b>Average Income</b>	<b>\$71,845</b>	<b>\$76,365</b>	<b>\$82,950</b>	<b>\$77,812</b>	<b>\$68,745</b>	<b>\$76,256</b>

Source : ABS Census 2011; Urbis

## 2.6.5 EDUCATION

Table 14 illustrates the level of formal education attained by residents within the LGA of the Hunter region and Lower Hunter region. With the exception of Cessnock, all areas demonstrate a majority of the population attaining formal education at year 12 level and above. Newcastle holds the greatest proportion of higher education individuals (86.7%), whilst only 41.8% of Cessnock residents having gaining education at Year 12 level or higher.

TABLE 14 – EDUCATION ATTAINMENT

### Education Attainment

LOWER HUNTER REGION, 2011

LGA	Cessnock	Lake Macquarie	Maitland	Newcastle	Port Stephens	Lower Hunter Region
Bachelor Degree or Higher	6.7%	13.0%	11.2%	19.7%	9.6%	13.7%
Advanced Diploma or Associate Degree	5.3%	7.9%	7.3%	7.7%	7.8%	7.5%
Undertaking Tertiary Education	2.0%	4.0%	3.7%	8.8%	2.8%	5.0%
Year 12	27.8%	38.2%	37.3%	50.5%	35.7%	40.4%

Source: ABS 2011 Census; Urbis

LGAs with a higher proportion of white collar based employment contain residents with higher education attainment, with 19.7% of Newcastle and 13% of Lake Macquarie residents having a bachelor degree (or higher). By comparison 6.7% of Cessnock residents hold a bachelor degree or higher, reflecting the higher proportion of its employment base in blue collar industry sectors.

## 2.6.6 INDUSTRY OF EMPLOYMENT

Table 15 displays the main industries of employment in the Lower Hunter region with Manufacturing, Retail trade and Health care and social assistance representing the industries with the greatest employment and Agriculture, forestry and fishing and Arts and recreational services representing the least employment. Unlike the other areas listed in Table 15, Cessnock has strong presence of the Mining industry representative of the mines located in close proximity.

TABLE 15 – RESIDENT INDUSTRY EMPLOYMENT SECTORS

## Industry Sector Employment

LOWER HUNTER REGION LGAs, 2011

	Cessnock	Lake Macquarie	Maitland	Newcastle	Port Stephens	Lower Hunter Region
Agriculture, forestry & fishing	1.7%	0.3%	1.1%	0.3%	1.3%	0.6%
Mining	10.3%	2.7%	6.4%	1.6%	1.8%	3.4%
Manufacturing	12.9%	10.5%	11.8%	9.3%	10.9%	10.6%
Elec., gas, water & waste services	1.4%	2.0%	1.5%	1.6%	1.0%	1.7%
Construction	7.9%	9.2%	8.4%	6.6%	8.8%	8.2%
Wholesale trade	2.4%	3.2%	3.1%	2.9%	2.8%	3.0%
Retail trade	11.9%	12.0%	11.8%	10.7%	11.8%	11.5%
Accommodation & food services	9.8%	6.4%	6.6%	8.0%	9.2%	7.6%
Transport, postal & warehousing	4.2%	4.4%	4.8%	4.3%	5.7%	4.6%
Information media & telecomm.	0.6%	0.9%	0.9%	1.3%	0.8%	1.0%
Financial & insurance services	1.5%	3.3%	2.4%	3.4%	1.7%	2.9%
Rental, hiring & real estate services	1.6%	1.4%	1.5%	1.5%	1.9%	1.5%
Prof., scientific & tech. services	3.6%	5.6%	5.2%	7.6%	4.9%	5.9%
Administrative & support services	3.4%	3.0%	3.3%	3.0%	3.0%	3.1%
Public administration & safety	4.2%	5.8%	6.0%	7.1%	10.7%	6.6%
Education & training	4.9%	8.6%	7.4%	9.6%	6.4%	8.2%
Health care & social assistance	11.2%	14.8%	11.8%	16.2%	11.6%	14.2%
Arts & recreation services	1.2%	1.1%	1.0%	1.3%	1.2%	1.2%
Other	5.2%	4.5%	5.1%	3.7%	4.5%	4.4%

Source : ABS Census 2011; Urbis

### 2.6.7 PLACE OF EMPLOYMENT / JOURNEY TO WORK

Table 16 shows that majority of Cessnock residents work within the LGA itself, followed by employment in Singleton and Maitland. Singleton, like Cessnock has a strong representation from the mining industry, therefore employees with similar skills are required in Singleton.

TABLE 16 – PLACE OF WORK

### Place of Work

CESSNOCK LGA, 2011

LGA / SLA	Number	%
Cessnock	10,125	48.7%
Singleton	2,586	12.4%
Maitland	2,289	11.0%
Newcastle - Inner City	815	3.9%
Newcastle - Outer West	797	3.8%
No Fixed Address (GMA)	765	3.7%
Lake Macquarie - North	648	3.1%
Port Stephens	500	2.4%
Newcastle - Throsby	480	2.3%
Lake Macquarie - West	410	2.0%
Balance	1,375	6.6%
<b>Total</b>	<b>20,790</b>	<b>100.0%</b>

Source : ABS Census 2011; Urbis

Lower Hunter LGAs such as Maitland and Newcastle have more 'diverse' economies and industry bases, and offer greater employment opportunity for broader range of workers not associated with mining.



## 2.7 WORKER POPULATION DEMOGRAPHIC

This section will assess the worker profile in the Lower Hunter Region, and the industry sectors that they are employed. This will provide an industry distribution of jobs within the Cessnock LGA and the Lower Hunter Region, workers place of residence and occupation.

### 2.7.1 INDUSTRY OF EMPLOYMENT

Cessnock LGA employment is focused primarily within mining, agriculture and manufacturing sectors, comprising 19.7% of the local jobs, compared to 13% in the Lower Hunter Region. This illustrates an employment base underpinned by mainly industrial sectors, with accommodation and food services also higher than the regional profile, in part servicing mining sector workers.

TABLE 17 – INDUSTRY SECTOR EMPLOYMENT

#### Industry Sector Employment

LOWER HUNTER REGION, 2011

LGA	Cessnock	Great Lakes	Maitland	Newcastle	Port Stephens	Lower Hunter Region
Agriculture, Forestry and Fishing	2.4%	4.0%	0.9%	0.2%	0.1%	1%
Mining	4.4%	1.4%	2.3%	0.8%	0.9%	1%
Manufacturing	12.7%	4.7%	9.0%	9.5%	10.4%	11%
Electricity, Gas, Water and Waste Services	0.4%	2.0%	1.5%	2.4%	1.5%	2%
Construction	7.7%	8.6%	8.3%	5.7%	5.2%	7%
Wholesale Trade	1.7%	1.5%	2.4%	3.5%	3.0%	3%
Retail Trade	13.1%	15.9%	14.6%	9.3%	6.4%	11%
Accommodation and Food Services	14.3%	12.4%	7.2%	6.7%	6.9%	8%
Transport, Postal and Warehousing	2.7%	2.8%	4.0%	5.3%	8.1%	5%
Information Media and Telecommunications	0.4%	0.7%	0.7%	1.4%	2.2%	1%
Financial and Insurance Services	1.0%	1.5%	2.1%	4.0%	6.4%	3%
Rental, Hiring and Real Estate Services	1.5%	2.5%	2.2%	1.5%	1.8%	2%
Professional, Scientific and Technical Services	2.9%	3.7%	5.6%	7.9%	11.8%	6%
Administrative and Support Services	2.7%	2.7%	3.5%	2.8%	3.4%	3%
Public Administration and Safety	4.8%	4.6%	5.2%	6.1%	9.4%	7%
Education and Training	8.1%	7.6%	8.4%	8.8%	5.5%	8%
Health Care and Social Assistance	10.7%	14.5%	12.9%	17.6%	11.0%	15%
Arts and Recreation Services	1.4%	2.1%	0.9%	1.1%	0.8%	1%
Other Services	4.8%	4.2%	6.1%	3.6%	3.5%	4%
Inadequately described	1.1%	1.1%	1.2%	1.0%	1.0%	1%
Not stated	1.1%	1.4%	0.9%	0.9%	0.9%	1%

Source : ABS Census 2011; Bureau of Transport 2013; Urbis

### 2.7.2 WORKER OCCUPATION

The worker occupation profile shows that the industry base of Cessnock differs from the rest of the Lower Hunter Region, with a significantly higher blue collar industry base, specifically:

- Technicians and trade workers (19.4%)
- Machinery operators and drivers (14.6%)
- Labourers (13.5%)

The total Lower Hunter Region has a significantly higher proportion of Professionals (19.7%) compared to Cessnock (11.3%). This reflects the type of centres located in the remainder of the Lower Hunter with Newcastle and Lake Macquarie containing the highest proportion of white collar jobs base.

TABLE 18 – WORKER OCCUPATION

## Occupation of Workers

LOWER HUNTER REGION 2011

	Cessnock	Lower Hunter Region
Managers	8.9%	10.0%
Professionals	11.3%	19.7%
Community & Personal Service Workers	10.6%	10.3%
Clerical & Administrative Workers	11.6%	14.4%
Sales Workers	10.1%	10.4%
<b>White Collar (%)</b>	<b>52.5%</b>	<b>64.8%</b>
Technicians & trades workers	19.4%	16.7%
Machinery operators & Drivers	14.6%	8.2%
Labourers	13.5%	10.2%
<b>Blue Collar (%)</b>	<b>47.5%</b>	<b>35.2%</b>

Source : ABS Census 2011, Urbis

### 2.7.3 PLACE OF RESIDENCES / JOURNEY TO WORK / EMPLOYMENT CONTAINMENT

The place of residence of local workers illustrates a high job containment rate in Cessnock, with 64.8% of workers living within the Cessnock LGA. In addition to this, 11.6% of workers reside nearby in Maitland, which while sitting outside the LGA border illustrates that there is a high propensity for Cessnock workers to live nearby.

This has ramifications for potential uses on the subject site for accessing a workforce, which will likely draw on a local workforce. This may preclude influence certain uses that rely on workers with higher education or typical 'white collar' backgrounds. The prevalence of local blue collar workers would support the presence of industrial sector businesses rather than higher order white collar based employment

TABLE 19 – PLACE OF RESIDENCE

## Place of Residence

CESSNOCK LGA, 2011

LGA / SLA	Number	%
Cessnock	10,125	64.8%
Maitland	1,821	11.6%
Lake Macquarie - North	514	3.3%
Lake Macquarie - West	447	2.9%
Singleton	424	2.7%
Newcastle - Outer West	371	2.4%
Newcastle - Inner City	329	2.1%
Newcastle - Throsby	323	2.1%
Port Stephens	314	2.0%
Lake Macquarie - East	236	1.5%
Balance	733	4.7%
	<b>15,637</b>	<b>100%</b>

Source : ABS Census 2011; Bureau of Transport 2013 ; Urbis

## 2.8 SUMMARY

### GLOBAL, NATIONAL AND NSW ECONOMIC CONTEXT

- The historic correction away from Australia's traditional manufacturing and agricultural led export market was driven primarily by the growth in demand for resources from the Chinese economy. Since 2003 China, and other growing export markets such as India and South Korea have increasingly comprised a greater share of Australia's exports at the expense of advanced economies such as the EU and US. Despite this existing export markets such as Japan continues to comprise a large market for Australian exporters, including thermal coal exports from the Hunter Region
- Trade exposed sectors will continue to face challenging economic conditions with a higher exchange rate and competition from low cost competitors overseas. Manufacturers servicing a local market, tied to increasing population and household formation however are likely to continue to increase their employment and capacity, in line with future population growth across Hunter Region LGAs. The availability of industrial land well connected to key transport routes and close to their market will likely drive the location of these businesses
- Global growth in coal consumption, industrial production and electricity generation have been weak in traditional thermal coal export locations such as Japan and Korea, with flow-on effects to demand for thermal coal from the Hunter
- This structural shift in the NSW economy from labour intensive and trade exposed sectors to a more serviced based economy is reflected in the performance of the Hunter Region's manufacturing sector. The key difference is the economic performance and growth attributed to the mining sector, with the Hunter Region comprising a large endowment of the State's coal resources

### INDUSTRIAL SECTOR EMPLOYMENT GROWTH

- There is a broad shift in economic structure occurring not just in the Hunter Region but nationally, from traditional industrial based employment to professional services and higher order employment
- The manufacturing sector regionally will continue to comprise a reducing proportion of overall employment share, however will continue to be a major employer within the region. This will not be consistent across all types of manufacturing with a number of manufacturers tied to residential construction which will continue to expand in line with population and household formation growth. Manufacturers that face competition from abroad or rely on export markets will continue to be constrained by a historically strong Australian dollar and international operating cost disparity
- The construction sector will be supported by ongoing population growth, slightly above what was seen between 2001 and 2011, specifically benefiting residential construction businesses and furniture and fabricated metal manufacturers. Civil engineering and non-residential construction will be supported by a strong infrastructure and mining project pipeline
- The wholesale trade industry is contracting at the Regional level, and this will have dampening effect on demand for industrial land in the region. However, wholesale trade of building materials is likely to grow in line with construction industry growth
- The transport, postal and warehousing sector provides essential services and employs approximately 606,200 workers nationally in 2011 - 12. In terms of industry value added, the transport, postal and warehousing industry contributed 5.1 per cent (\$69.8b) to the Australian economy in 2011-12. Its continued expansion is tied to the movements of goods and commodities, and is highly impacted by imports and exports. In the Lower Hunter this is largely comprised by coal exports, being shipped to the Port of Newcastle, and containerised freight servicing the local population. We note that the current strategy for the Port of Newcastle is expected to see a significant growth in container freight as the Government's preference for container freight growth lies with Port Botany and Port Kembla
- Despite moderating commodity prices, the mining sector has a strong investment pipeline likely to support future employment and servicing industries. Given the time-horizon of capital invested in the mining sector it is likely to that employment will be maintained over the medium to long-term, with investment assuming commodity prices do not fall significantly. Given the variable nature of commodity prices and factors impacting our employment forecasts for the mining sector will factor in

estimated employment derived from existing projects forming a moderating share of employment growth for the medium to long term

## RESIDENT POPULATION DEMOGRAPHICS

- Lake Macquarie and Port Stephens accommodate the highest proportion of retiree (65+) residents, while Newcastle has the highest proportion of working age residents. Port Stephens, Cessnock and Maitland have the largest proportion of 'Youth' (0-15) residents, indicating the presence of family households, with children
- Lower Hunter LGAs such as Maitland and Newcastle have more 'diverse' economies and industry bases, and offer greater employment opportunity for broader range of workers not associated with mining
- LGAs with a higher proportion of white collar based employment contain residents with higher education attainment, with 19.7% of Newcastle and 13% of Lake Macquarie residents having a bachelor degree (or higher). By comparison 6.7% of Cessnock residents hold a bachelor degree or higher, reflecting the higher proportion of its employment base in blue collar industry sectors
- There is also high retention of resident workers within the Cessnock LGA, with 48.7% of residents employed locally.

## WORKER POPULATION DEMOGRAPHICS

- Cessnock LGA employment is focused primarily within mining, agriculture and manufacturing sectors, comprising 19.7% of the local jobs, compared to 13% in the Lower Hunter Region. This illustrates an employment base underpinned by mainly industrial sectors, with accommodation and food services also higher than the regional profile, in part servicing mining sector workers
- The total Lower Hunter Region has a significantly higher proportion of Professionals (19.7%) compared to Cessnock (11.3%). This reflects the type of centres located in the remainder of the Lower Hunter with Newcastle and Lake Macquarie containing the highest proportion of white collar jobs base
- The place of residence of local workers illustrates a moderate to high job containment rate for a regional location in Cessnock, with 64.8% of workers living within the Cessnock LGA. In addition to this, 11.6% of workers reside nearby in Maitland, which while sitting outside the LGA border illustrates that there is a high propensity for Cessnock workers to live close to where they work
- This has ramifications for potential uses on the subject site for accessing a workforce, which will likely draw on a local workforce. This may influence certain uses that rely on workers with higher education or typical 'white collar' backgrounds. The prevalence of local blue collar workers would support the presence of industrial sector businesses rather than higher order white collar based employment

### 3 Lower Hunter - Employment Land Supply

This section of the report examines the employment land supply across the Lower Hunter Region. The movement from a macro to micro level of analysis will provide insight regarding the supply characteristics of the wider region, as well as the relevant Local Government Areas (LGAs). The identified supply will provide an indication on whether the region has sufficient industrial land capacity to support forecast market demand for industrial land, and the characteristics required by the market.

#### 3.1 LAND ZONED FOR EMPLOYMENT

This section quantifies both the total amount of land that is zoned for employment purposes and the total amount of land that is vacant for future industrial development. This has been shown as a break down by LGA and by zoning, and results in totals for the Lower Hunter regions. For the purposes of identifying the overall land supply, Table 20 details the gross areas of employment land in both the Lower Hunter. In determining the total amount of zoned employment land, the relevant zoning classifications and zoned hectares have been sourced from the Local Environmental Plans (LEPs) from the associated LGAs.

TABLE 20 – EMPLOYMENT LAND SUPPLY

#### Employment Land Supply

LOWER HUNTER EMPLOYMENT LANDS SUPPLY

LGA	Total Zoned (Ha)	Special / Use Bulky Goods (Ha)	Industrial Use (Ha)	Vacant Industrial Use (Ha)	Vacant Industrial Use (%)
Newcastle	2,584	52	2,532	110	4%
Lake Macquarie	2,372	1,776	596	85	14%
Port Stephens	1,505	132	1,374	633	46%
Maitland	927	248	680	231	34%
Cessnock	1,045	24	1,021	911	89%
<b>Total Lower Hunter</b>	<b>8,432</b>	<b>2,231</b>	<b>6,201</b>	<b>1,970</b>	<b>32%</b>

Source: ADW Johnson; Cordells 2013; Urbis

Table 21 below outlines a high level potential area in each LGA for industrial land development, and the key industrial precincts that this would be located in. This provides an indicative overview of the capacity of the different industrial parks in the future, and potentially competing employment lands to the subject site.

TABLE 21 – INDICATIVE LGA AND INDUSTRIAL PARK INDUSTRIAL LAND CAPACITY

LGA	INDUSTRIAL LOCATIONS	INDICATIVE POTENTIAL AREA (HA)
<b>Maitland</b>	– Metford, Rutherford and Thornton/Ashtonfield	376
<b>Cessnock</b>	– Cessnock Civic Centre, Maitland Road Site, Cessnock and HEZ	578
<b>Newcastle</b>	– Black Hill, Kooragang Island, Freeway Business Park and West Wallsend	633
<b>Port Stephens</b>	– Newcastle Airport and Tomago	444
<b>Lake Macquarie</b>	– Cardiff Biz Park and Cameron Park Industrial Estate,	311

Source: Hunter Means Business Investment Prospectus 2007; Regional Land Management Corporation; Maitland Urban Settlement Strategy 2001-2020; Newcastle Industrial Land Analysis 2009

### 3.2 LOWER HUNTER REGION – LOCAL GOVERNMENT AREA INDUSTRIAL LAND SUPPLY

This section provides an overview of the industrial land supply in each of the Hunter Region LGAs. The land supply description of the LGA is followed by a map of the employment land within the LGA providing the geographical context of the area. The significant employment land estates are reviewed to provide context in assessing existing supply and future demand for employment lands. These are outlined in further detail in Appendix A through to G which provides specific detail of key industrial parks across the Hunter Region. These industrial parks have been summarised to provide an indication of location, scale, allotment sizes, property types, occupants, constraints and proposed future development.

In alignment with the breakdown of zoned land, the major industrial parks and estates are largely located in the Lower Hunter LGAs of Newcastle, Maitland, Lake Macquarie and Port Stephen.

#### 3.2.1 CESSNOCK

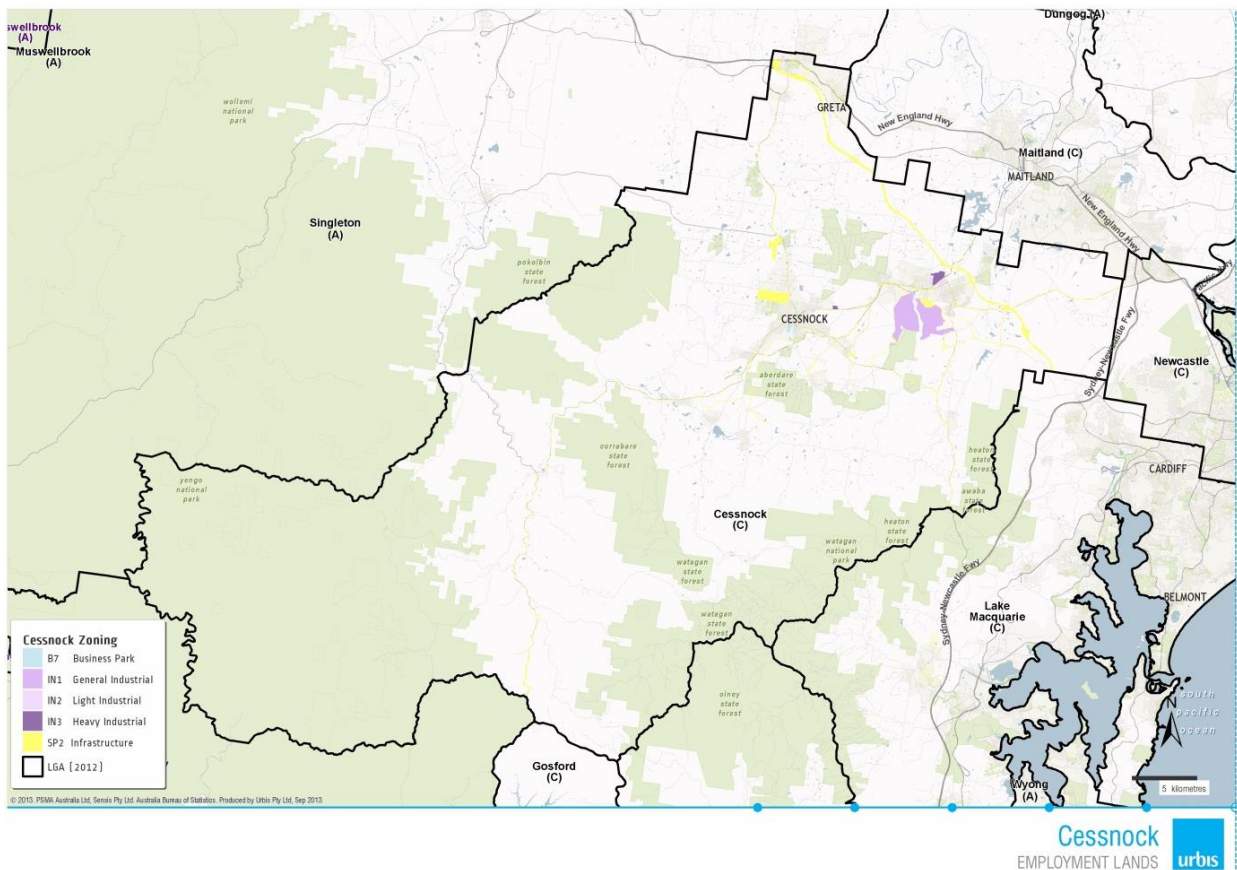
The Cessnock LGA has historically had a modest amount of industrial land. These were largely used for aluminium production and various urban services. More recently the addition of the Hunter Economic Zone (HEZ) has injected a large amount of vacant industrial zoned land into the LGA.

The major industrial areas in the Cessnock LGA are:

- Hunter Economic Zone
- Weston

While most industrial zoned land is used for the purpose, the occupied lots in the B7 Business Park zoned area near Cessnock is currently being used for bulky goods retail, including a Bunnings Trade and auto servicing.

FIGURE 14 – CESSNOCK EMPLOYMENT LANDS



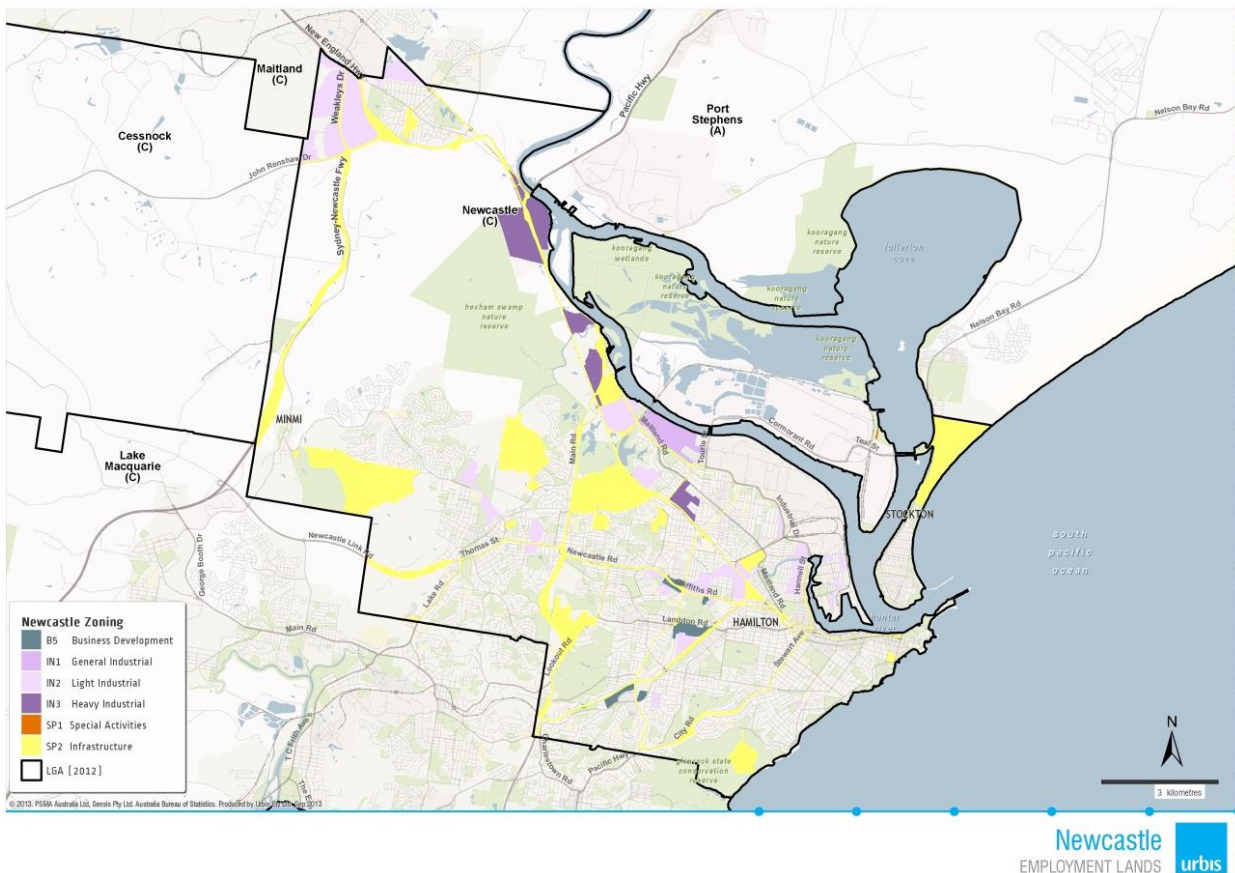
### 3.2.2 NEWCASTLE

The Newcastle LGA is home to some of the most established industrial areas in the Hunter region. The proximity to the Port of Newcastle has seen a congregation of port-related industries such as logistics, coal loading and heavy engineering. Equally, nearby major urban areas have provided demand for smaller industrial urban services occupants, such as auto services and self-storage. The major industrial areas in the Newcastle LGA are:

- Steel River Eco-Industrial Park
- Intertrade Industrial Park
- Kooragang Island
- Tighesm Hill
- Warabrook Industrial Estate
- Holmwood Business Park & Freeway Business Park

Given the longer history of the Newcastle industrial areas, there are also a number of disused sites that provide potential infill development opportunities, such as the Pacific National Rail site in Broadmeadow and the Wickham Self Storage facility. We note however that alternative uses for these sites may be for non-industrial uses. It may also be worth investigating a few key sites that have under-utilised buffer areas, such as the Elgas site on Chatham Road. Meanwhile, a supply of remediated land stock is currently or soon to be available, as discussed in the following projects. Some future vacant land is also available, such as the zoned industrial area south of Hexham station on the Pacific Highway, while site works are currently taking place in the Freeway Business Park and in the site south of Minmi Road. Newcastle is also the LGA seeing the most encroachment pressure from bulky goods retailing, with almost all B5 Business Development land occupied by bulky goods users. There is also some inter-mixing with residential uses, especially in the older precincts, where dated workers cottages can be found.

FIGURE 15 – NEWCASTLE EMPLOYMENT LANDS





### 3.2.3 PORT STEPHENS

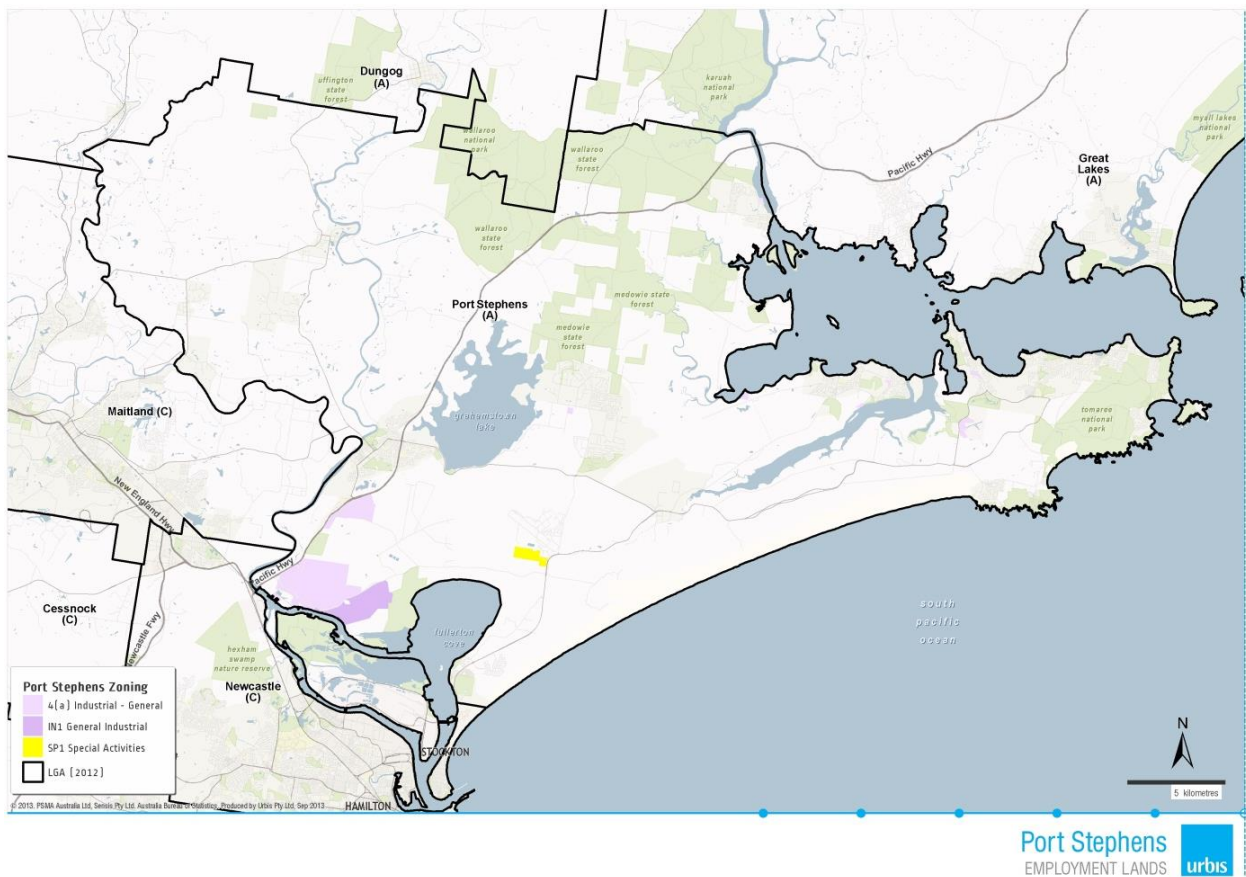
The Port Stephens LGA represents an established industrial location, near the Port of Newcastle and the RAAF Base in Williamstown. Both heavy and light industrial users can be found, with a mix of industries ranging from heavy engineering and mining, to building related and self-storage. The major industrial areas in the Port Stephens LGA are:

- Tomago Industrial Area
- Heatherbrae Industrial Estate

The Port Stephens LGA has seen considerable activity in recent times, both in the market and at a planning level. The declaration of the 545ha Tomago Industrial Site as State Significant further cemented the area as an industrial hub, and secured considerable future industrial land supply in the area.

The Heatherbrae Industrial Area contains a considerable amount of highway retail, such as fast food restaurants and service stations.

FIGURE 16 – PORT STEPHENS EMPLOYMENT LANDS



### 3.2.4 MAITLAND

The Maitland LGA has a reasonable allocation of industrial land, with most of the sites more modern than those found closer to Newcastle. Utilising transport links and proximity to both the Port of Newcastle and the mining regions, users represent a wide cross-section of industries.

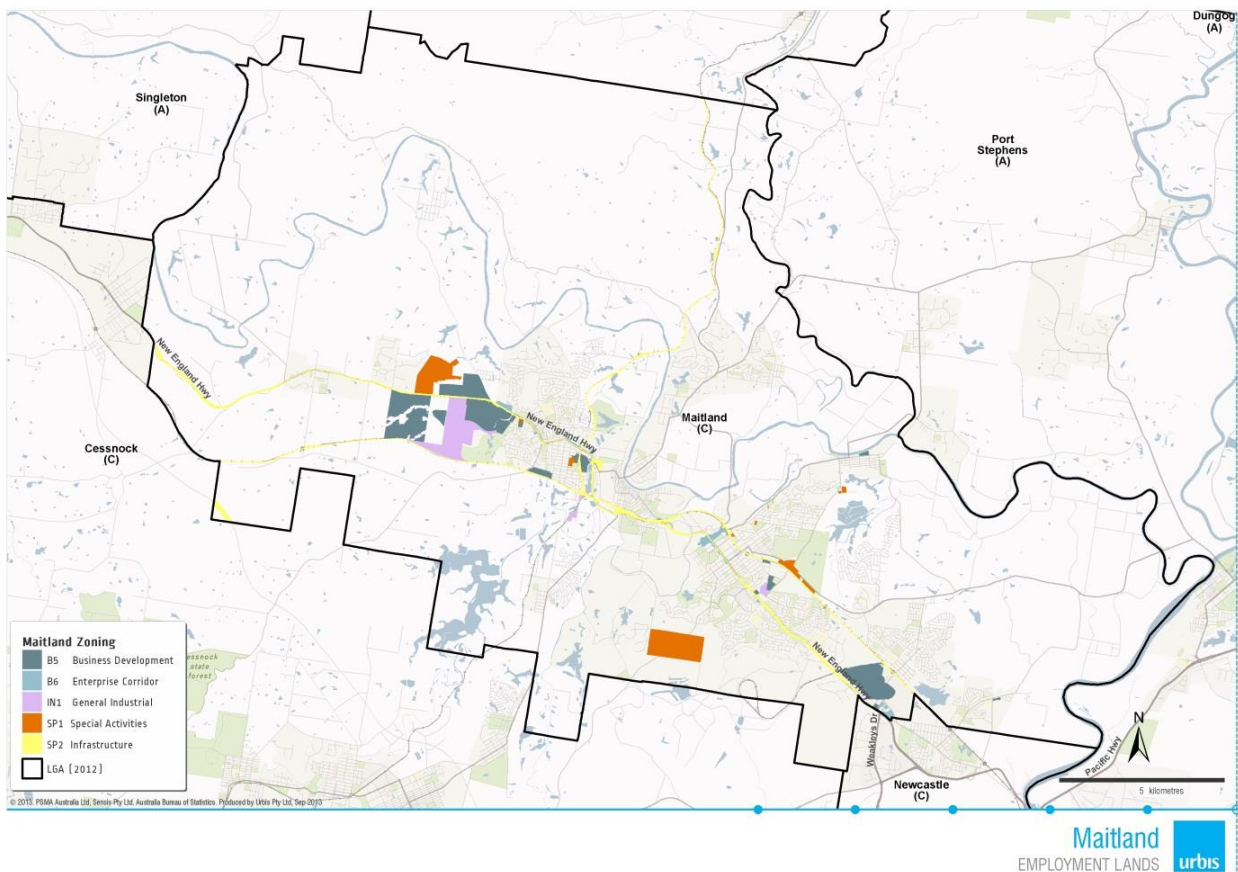
The major industrial areas in the Maitland LGA are:

- Anambah Business Park, Racecourse Business Park & Centrapark
- Thornton Industrial Estate

Within Maitland LGA, there are two major non-industrial SP1 Special Activities zoned areas, including the Maitland Airport. Equally, a considerable portion of the existing B5 Business Development zoned land is occupied by bulky goods users, such as Harvey Norman and Home Hardware.

Future supply is largely zoned as B5 Business Development, with major parcels located north and west of Racecourse Business Park.

FIGURE 17 – MAITLAND EMPLOYMENT LAND



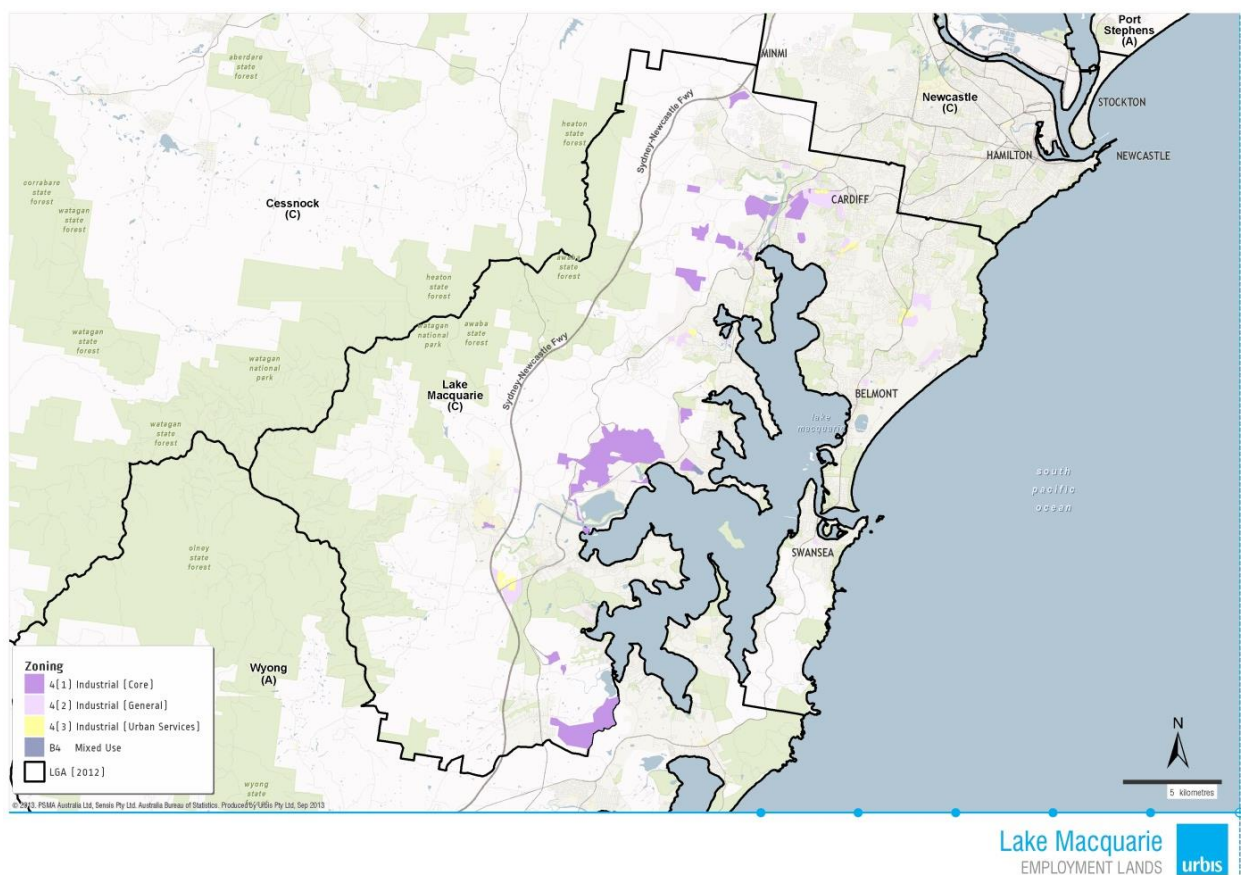
### 3.2.5 LAKE MACQUARIE

The Lake Macquarie LGA primarily contains industrial users towards the north, being in proximity to the Newcastle CBD. Occupants are primarily smaller industrial users, such as automotive and building related industries. The major industrial areas in the Lake Macquarie LGA are:

- Cardiff Industrial Estate and Cardiff Central
- Cameron Park Industrial Estate
- Pasmenco
- Gateshead
- Redhead

While the Lake Macquarie LGA does have a sizeable amount of zoned industrial land (2,372ha), 75% of this (1,776ha) is used for Special Uses and bulky goods. The Special Uses are largely under the 4(1) Industrial (Core) zoning, and include Eraring Power Station, Vales Point Power Station, Mannering Lake, coal mines and storage, and sewerage plants. The 4(3) Industrial (Urban Services) zoned land is almost entirely occupied by bulky goods retail. New supply is primarily in the form of Cardiff Central; the expansion of the existing Cardiff Biz Park.

FIGURE 18 – LAKE MACQUARIE EMPLOYMENT LANDS



### 3.3 SUMMARY

When assessing the capacity of employment lands to accommodate future industry growth, it is important to consider where the majority of this vacant employment land is focused, with over half of this located in the Tomago Industrial Area, the Hunter Economic Zone (HEZ) and Singleton Green Industrial Estate.

It is possible that not all of the current and proposed supply is seen as being suitable for servicing the demand which is expected to come mainly from the transport and storage, construction and mining industries. These businesses typically require large land parcels, and access to transport routes is of course a key requirement for transport and storage, and mining businesses. Therefore the current supply does not necessarily preclude the development of new employment lands where the opportunity exists to provide employment lands that better meet the needs of industrial operators and may indicate gaps in the existing supply of employment lands.

- HEZ, due to its potential to provide large lots, and due to their accessibility has previously been considered viable options for transport and freight operators. Despite this it has experienced poor uptake. Physical/ecological constraints, poor agglomeration (it does not attach to existing industry), poor connectivity and a comparable lack of access by a relevant workforce have been the key drivers behind this. It also likely was impacted in the fall in manufacturing as a proportion of the overall industry found in the Hunter Region.
- The developments around Newcastle Port, which are currently undergoing redevelopment and expansion, and will continue to attract Port and Urban related industrial sectors. These include:
  - Steel River Eco-Industrial Park
  - Intertrade Industrial Park (Mayfield)
  - Kooragang Island
  - Rutherford.
- These industrial precincts represent strategic nexus between port, infill central location, and strong agglomeration with surrounding industries.
- In addition to mining related companies, it is conceivable that transport and freight businesses could be accommodated in Steel River and the Intertrade Industrial Park (Mayfield). With frontage to a port, good transport links and its proximity to Newcastle's CBD the Intertrade Industrial Park has strong potential to accommodate a range of port, freight and general industrial uses on its 150ha site.
- It is likely that the Kooragang Island development will be utilised primarily for coal loading activity, and utilised mainly for specialised mining or heavy industrial uses.

The proximity of the subject site to the Hunter Expressway and its connectivity to major population bases to the north and east will increase the competitiveness of the Hydro land.

## 4 Employment Lands Forecasts

Future demand for industrial land in the Hunter can be estimated by forecasting employment job numbers for the Region, and applying land per employee ratios. This involves the following:

1. Forecasting total jobs growth in the Hunter based on population projections
2. Forecasting jobs per industry within the Hunter, based on industry growth forecasts
3. Converting jobs growth per industry into jobs growth by land use
4. Converting forecasted jobs growth into floor space requirements
5. Converting floor space requirements into demand for industrial land.

This analysis is presented below.

### 4.1 JOBS FORECAST

Based on the official forecast growth rate applied to the 2011 census, the Lower Hunter population is expected to grow by 112,877 new residents between 2011 and 2031, we expect an additional 34,689 jobs to be created in the Lower Hunter between 2011 and 2031, assuming the 2011 unemployment rate is maintained.

This reflects a falling labour force, residents aged between 15-64 years of age, which fall from 64% of the population in 2011 to 58% of the population in 2031. This has been based on Department of Planning forecasts for the region.

TABLE 22 – WORKFORCE PROJECTIONS

#### Workforce Projections

##### LOWER HUNTER REGION

Labour Force Projections Hunter Region	2006	2011	2016	2021	2026	2031
Estimated Resident Population (No.)	517,511	540,112	573,019	600,499	627,482	652,989
Change in Resident Population (No.)		22,601	32,907	27,480	26,983	25,507
0 - 14 years (%)	20%	19%	19%	19%	18%	18%
65 years and above (%)	16%	17%	18%	20%	23%	24%
15-64 years (%)	65%	64%	63%	61%	59%	58%
15 - 64 years (No.)	334,743	348,175	358,837	365,871	370,937	377,028
Labour Force Participation (%)	67.0%	70.8%	71.5%	72.1%	72.7%	72.9%
Labour Force Participation (No.)	224,150	246,393	256,491	263,942	269,693	275,033
Unemployment (%)	7.09%	5.63%	5.62%	5.62%	5.62%	5.62%
Unemployment (No.)	15,887	13,864	14,415	14,832	15,157	15,457
Resident Workforce (No.)	208,263	232,529	242,076	249,110	254,536	259,576
Jobs in the Lower Hunter (No.)	181,971	198,505	210,826	219,912	226,919	233,194
Net Jobs Balance (%)	87%	85%	87%	88%	89%	90%

Source: ABS Census 2011, Urbis

## 4.2 INDUSTRY SECTOR FORECAST

Based on our analysis of industry drivers and trends, we have apportioned total jobs growth to individual industries. Of those industries which typically require industrial land, mining, construction and transport and storage will experience the greatest jobs growth.

We have forecast the change in the proportion of jobs in each industry based on our assessment of key industry segments outlined in Section 2.5.

TABLE 23 – EMPLOYMENT PROPORTION BY INDUSTRY

### Employment Proportion by Industry

LOWER HUNTER REGION

	2001	Actual		Forecast			Change 2011-31		
		2006	2011	2016	2021	2026	2031	No.	%
Agriculture, forestry & fishing	1.2%	1.0%	0.6%	0.5%	0.4%	0.4%	0.4%	-0.22%	-36.7%
Mining	1.2%	1.2%	1.7%	1.9%	2.0%	2.1%	2.2%	0.45%	25.5%
Manufacturing	13.1%	11.7%	11.1%	10.7%	10.4%	10.0%	9.8%	-1.29%	-11.7%
Elec., gas, water & waste services	1.2%	1.5%	1.7%	1.7%	1.7%	1.7%	1.7%	-0.05%	-2.7%
Construction	5.8%	6.4%	6.6%	7.0%	7.3%	7.4%	7.6%	1.02%	15.5%
Wholesale trade	4.8%	3.5%	3.0%	2.8%	2.5%	2.3%	2.0%	-1.01%	-33.2%
Retail trade	18.3%	13.3%	12.2%	12.2%	12.3%	12.3%	12.4%	0.16%	1.3%
Accommodation & food services	5.9%	7.7%	7.9%	7.9%	7.9%	7.9%	7.9%	-0.02%	-0.3%
Transport, postal & warehousing	3.9%	4.2%	4.3%	4.5%	4.6%	4.8%	4.8%	0.55%	12.9%
Information media & telecomm.	1.3%	1.2%	1.0%	0.9%	0.9%	0.9%	0.9%	-0.08%	-7.7%
Financial & insurance services	2.9%	3.2%	3.2%	3.1%	3.1%	3.1%	3.0%	-0.15%	-4.6%
Rental, hiring & real estate services	9.3%	1.8%	1.7%	1.6%	1.6%	1.6%	1.6%	-0.08%	-4.6%
Prof., scientific & tech. services	-	5.6%	6.2%	6.2%	6.2%	6.2%	6.2%	-0.04%	-0.6%
Administrative & support services	-	2.5%	2.7%	2.7%	2.7%	2.7%	2.7%	0.00%	-0.1%
Public administration & safety	4.9%	6.8%	6.8%	6.8%	6.8%	6.7%	6.7%	-0.10%	-1.5%
Education & training	8.1%	8.4%	8.6%	8.6%	8.6%	8.6%	8.6%	-0.04%	-0.4%
Health care & social assistance	12.8%	13.6%	15.0%	15.4%	15.8%	16.2%	16.6%	1.60%	10.6%
Arts & recreation services	1.8%	1.1%	1.2%	1.2%	1.2%	1.2%	1.2%	-0.03%	-2.2%
Other	3.7%	5.2%	4.4%	4.3%	4.1%	3.9%	3.8%	-0.68%	-15.3%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>		

Source: 1996, 2001 and 2006 ABS Census; NSW Dept of Planning, 2007 pop forecast; Urbis

TABLE 24 – LOWER HUNTER EMPLOYMENT BY INDUSTRY

## Lower Hunter Employment by Industry

LOWER HUNTER REGION

	2001	Actual	2011	Forecast	→			Change 2011-31	
		2006		2016	2021	2026	2031	No.	%
Agriculture, forestry & fishing	2,023	1,787	1,218	1,053	949	929	906	-312	-25.6%
Mining	1,963	2,261	3,471	4,103	4,451	4,770	5,118	1647	47.5%
Manufacturing	21,227	21,314	21,983	22,566	22,872	22,783	22,808	825	3.8%
Elec., gas, water & waste services	1,909	2,661	3,383	3,531	3,670	3,780	3,866	483	14.3%
Construction	9,335	11,671	13,131	14,848	15,999	16,847	17,814	4683	35.7%
Wholesale trade	7,758	6,330	6,036	5,854	5,489	5,152	4,736	-1300	-21.5%
Retail trade	29,724	24,187	24,214	25,811	26,999	28,005	28,825	4611	19.0%
Accommodation & food services	9,530	14,014	15,715	16,633	17,354	17,885	18,410	2695	17.2%
Transport, postal & warehousing	6,250	7,715	8,516	9,432	10,223	10,874	11,294	2778	32.6%
Information media & telecomm.	2,096	2,248	1,957	1,939	2,013	2,073	2,121	164	8.4%
Financial & insurance services	4,745	5,912	6,334	6,491	6,742	6,938	7,100	766	12.1%
Rental, hiring & real estate services	15,107	3,230	3,328	3,346	3,503	3,622	3,732	404	12.1%
Prof., scientific & tech. services	-	10,235	12,369	13,144	13,675	14,095	14,436	2067	16.7%
Administrative & support services	-	4,525	5,333	5,684	5,885	6,081	6,258	925	17.3%
Public administration & safety	7,890	12,393	13,549	14,310	14,845	15,291	15,674	2125	15.7%
Education & training	13,133	15,245	17,052	18,094	18,849	19,430	19,946	2894	17.0%
Health care & social assistance	20,727	24,764	29,777	32,565	34,850	36,840	38,703	8926	30.0%
Arts & recreation services	2,974	1,997	2,335	2,426	2,530	2,611	2,684	349	14.9%
Other	5,934	9,482	8,804	8,998	9,015	8,913	8,761	-43	-0.5%
<b>Total</b>	<b>162,325</b>	<b>181,971</b>	<b>198,505</b>	<b>210,826</b>	<b>219,912</b>	<b>226,919</b>	<b>233,194</b>	<b>34689</b>	<b>17.5%</b>

Source: 1996, 2001 and 2006 ABS Census; NSW Dept of Planning, 2007 pop forecast; Urbis

## 4.2.1 JOBS GROWTH BY LAND USE

Of the 34,689 new jobs expected to be created in the Lower Hunter between 2011 and 2031, approximately 4,774 of these are expected to be in industrial based sectors.

TABLE 25 – JOBS GROWTH BY LAND USE

### Jobs Growth by Land Use

LOWER HUNTER REGION

	2011	2016	2021	2026	2031	Increase
Industrial	43,415	45,587	46,876	47,588	48,189	4,774
Office	54,306	56,883	58,920	60,485	61,784	7,478
Retail	26,929	28,559	29,736	30,706	31,492	4,563
Education	16,199	17,189	17,907	18,459	18,949	2,750
Health	26,799	29,308	31,365	33,156	34,833	8,034
Other	15,483	16,338	17,016	17,520	18,005	2,522
Off-site	12,112	13,539	14,550	15,334	16,130	4,018
Home	3,263	3,424	3,542	3,671	3,812	549
<b>Total</b>	<b>198,505</b>	<b>210,826</b>	<b>219,912</b>	<b>226,919</b>	<b>233,194</b>	<b>34,689</b>

Source: Urbis

## 4.2.2 LAND AREA DEMAND

The industrial floor space requirement translates to a net industrial land requirement of approximately 239 hectares between 2011 and 2031. This is based on an average employment density of 20 employees per hectare for industrial land.

We note that this represents a net developable area and excludes allowances for roads, verges, open space, buffer areas and utility corridors that would be created through an industrial estate. The requirement for this additional non-developable area can vary significantly from one development to another however can require up to one third of a total development site and higher in extreme cases. As such this assessment could translate into a gross requirement of approximately to 360 hectares to 2031. This equates to an average annual take up of 18 hectares (gross). It is worth noting that this will not equate to observed take up rates, as it does not factor in the resale of vacant industrial land sales.

TABLE 26 – LAND USE DEMAND

### Land Use Demand (Hectares)

LOWER HUNTER REGION

	2011	2016	2021	2026	2031	Increase
Industrial	2,171	2,279	2,344	2,379	2,409	239
Office	418	438	453	465	475	58
Retail	337	357	372	384	394	57
Education	295	313	326	336	345	50
Health	298	326	349	368	387	89
Other	221	233	243	250	257	36
Off-site	0	0	0	0	0	-
Home	0	0	0	0	0	-
<b>Total</b>	<b>3,739</b>	<b>3,945</b>	<b>4,086</b>	<b>4,183</b>	<b>4,267</b>	<b>529</b>

Source: Urbis

Cessnock specifically will add an additional 38 net hectares of industrial lands (51 gross hectares) between 2011 and 2031; this is outlined in Table 27. This represents an annual take up of 1.9 hectares of net developable area (land not including roads, drainage, open space etc.), and equates to approximately 2.5 ha per annum gross developable area (assuming that non-developable area comprises 30%).



TABLE 27 – CESSNOCK, LAND USE DEMAND

## Land Use Demand (Hectares)

CESSNOCK LGA

	2011	2016	2021	2026	2031	Increase
Industrial	163	171	181	189	200	38
Office	21	23	25	26	28	6
Retail	29	30	32	33	35	6
Education	21	23	24	26	28	6
Health	16	17	19	20	22	6
Other	26	28	29	31	33	8
Off-site	0	0	0	0	0	-
Home	0	0	0	0	0	-
<b>Total</b>	<b>276</b>	<b>293</b>	<b>309</b>	<b>326</b>	<b>346</b>	<b>70</b>

Source: Urbis

This equates to approximately 16% of demand for industrial land within the Lower Hunter Region, comprising a smaller proportion of the regions industrial land development than other LGAs such as Newcastle and Maitland which benefit from close proximity to existing transport infrastructure.

Within Cessnock the industrial sectors driving its industrial sector jobs growth are forecast to expand by a total of 23% over this period. The following industry sectors are expected to represent the largest composition of this jobs growth:

- Mining Services, 818 jobs
- Construction, 793 jobs
- Transport, postal and warehousing, 112 jobs

Office based jobs are expected to expand by 810 jobs by 2031, representing 11% of the Lower Hunter's overall office based jobs growth. Office jobs typically have a higher density than industrial, and therefore will result in a smaller land-take of 6 hectares between 2011 and 2031, equating to 0.75 ha per annum over this period.

TABLE 28 – CESSNOCK, JOBS GROWTH BY LAND USE

## Jobs Growth by Land Use

CESSNOCK LGA

	2011	2016	2021	2026	2031	Increase
Industrial	3,252	3,427	3,611	3,787	4,008	756
Office	2,790	2,998	3,187	3,371	3,600	810
Retail	2,304	2,438	2,550	2,654	2,786	483
Education	1,175	1,259	1,341	1,422	1,521	346
Health	1,420	1,559	1,689	1,821	1,981	561
Other	1,789	1,927	2,052	2,174	2,325	536
Off-site	919	1,039	1,176	1,320	1,490	571
Home	399	415	436	456	482	83
<b>Total</b>	<b>14,047</b>	<b>15,062</b>	<b>16,040</b>	<b>17,005</b>	<b>18,194</b>	<b>4,147</b>

Source: Urbis

## 5 Development Opportunities Assessment

This section looks at specific opportunities for industrial development on the subject site. As discussed there are a number of key drivers that underpin this. So far in this report has explored:

- Population growth and demographics – this encompasses both the location of the customer base and the workforce
- Economic growth – including broad macroeconomic indicators and industry specific performance
- Case studies of local industrial precincts, and examples of infrastructure led development

This section will review other more localised factors, such as transport infrastructure investment, the local industrial market and opportunities for industry ‘agglomeration’ / economies of scale. Specifically:

- **Section 5.1** will review the major infrastructure projects undertaken within the Hunter Region
- **Section 5.2** will analyse recent sales data of industrial precincts with similar infrastructure accessibility, advising on an indicative land take-up, lot size and pricing
- **Section 5.3** will provide a summary of the key demand drivers outlined throughout this assessment and how they relate specifically to the subject site and its potential land use

### 5.1 MAJOR INFRASTRUCTURE PROJECTS

Physical infrastructure and capital investment can provide a catalyst to the development of industrial precincts and the demand from industrial operators. It impacts a number of drivers associated with the success of industrial precincts:

- Access to customers/end users
- Connectivity and access to key transport routes (road, rail, port facilities, suppliers, etc.)
- Accessibility by workforce and population growth

Physical infrastructure has a significant impact on these factors, providing greater accessibility to customers and workforce and reducing journey times. This section outlines the existing and upcoming capital investment in infrastructure that will service existing industrial precincts and potentially catalyse new industrial precincts within the Hunter Region. There are a number of major infrastructure projects planned or under construction currently in the Lower Hunter Region that may catalyse demand for new industrial land within Newcastle. These include:

- F3 Freeway (now M1 Pacific Motorway) to Raymond Terrace Upgrade
- Upgrade to the Kooragang Island (Terminal 4)
- The Mayfield Port Redevelopment
- The Hunter Expressway

## F3 FREEWAY TO RAYMOND TERRACE UPGRADE

The Pacific Highway between Hexham and Port Macquarie currently covers a distance of 218 kilometres, once upgraded it will have a length of 220 kilometres. The proposed upgrade to the F3 to Raymond Terrace will consist of:

- 15 kilometres of four lane highway
- Full access interchange at the F3 Freeway (now M1 Pacific Motorway) at Black Hill south of the John Renshaw Drive roundabout;
- A partial interchange at the Raymond Terrace bypass enabling access to and from the local road network
- Access to Tomago Road and the industrial area for northbound traffic via an off ramp
- North of Tomago Road ramps will allow northbound traffic to exit the upgrade to Heatherbrae and allow southbound traffic to leave the upgrade and access the existing highway
- Access to businesses on the highway at Heatherbrae would be via a ramp north of Tomago Road and at the interchange on the Raymond Terrace bypass north of Windeyers Creek

The interchange locations along the Pacific Highway will support the existing industrial areas of Tomago and Heatherbrae which are likely to make these locations more attractive to freight and logistics industrial users that require direct access to the Pacific Highway. This may come at the expense of more urban industrial parks such as Tighes Hill, Steel River and the future industrial precinct of Intertrade, with Industrial Drive their main connection to the Pacific Highway and the New England Highway facing capacity constraints due to use by other industrial users and commuters.

## THE PORT OF NEWCASTLE

The Port of Newcastle is one of the largest thermal coal export port, and currently mainly imports and exports bulk commodities such as alumina, petroleum, fertilizers, grains, cement, woodchips and steel. There a number of infrastructure development projects upgrading the employment lands and port berths, specifically to the Kooragang terminal and Mayfield redevelopment, which have implications for the broader opportunities for employment land development, in addition to the recent announcement of the Port's privatisation.

### KOORAGANG COAL SERVICES TERMINAL

The upgrade to the Kooragang Island (Terminal 4) is anticipated cost of \$5 billion and once fully upgraded provide additional 120 mega tonnes per annum (MTA) coal export capacity. This capacity is expected to support previously identified shipping demand, comprised of coal producers who have entered into a coal export contracts for an aggregate of more than 176 MTA for year 2015. This contracted volume exceeds the capacity of PWC's terminal 1 and 2 by 30 MTA, triggering the commercial need for terminal four. The latest expansion activities underway include:

- Extension of two stockpile areas to provide over half a million tonnes of additional coal stockpile area
- Completing the upgrade of the coal rail receivable systems to unload trains and build stockpiles at an increased rate
- Provision of a fourth berth to upgrade ship loading capacity
- Dredging to provide a navigation channel for the fourth berth
- Upgrade of the services to provide power, water, communication and process control infrastructure
- Completion of the upgrade of the coal stacking capacity with the replacement of the last two existing Stackers

150 ha is currently zoned for industrial capacity at the Kooragang Industrial Park, 100 ha is already occupied by tenants including HiFert, Graincorp, Tomago Aluminium, Sims Metal, Toll Transport, Barclay Mowlem, BOC Gases, John Holland, and Custom Transportable Buildings. The remaining land would be suited to a range of activities including an expansion of coal loading capacity and other large-scale industrial development with the remaining land suited to a range of industrial activities. With the expansion of Kooragang's coal shipping capacity may trigger additional need amongst ancillary industrial port servicing – however given all the coal is transported to the terminal via rail this would be expected to be from potentially light industrial operators that support port activity rather than freight and logistics operators. This may increase the need for rail transport of bulk commodities and coal, and therefore increase the potential for rail maintenance closer to the Port of Newcastle.

#### MAYFIELD DEVELOPMENT – PORT OF NEWCASTLE STRATEGIC DEVELOPMENT PLAN

A 90 hectare port side development site on the former BHP Steelworks site in Newcastle, with road, rail and sea access, is owned by the Newcastle Port Corporation. This land is strategic port land within the working port and has been set aside for the specific intent of supporting cargo handling infrastructure.

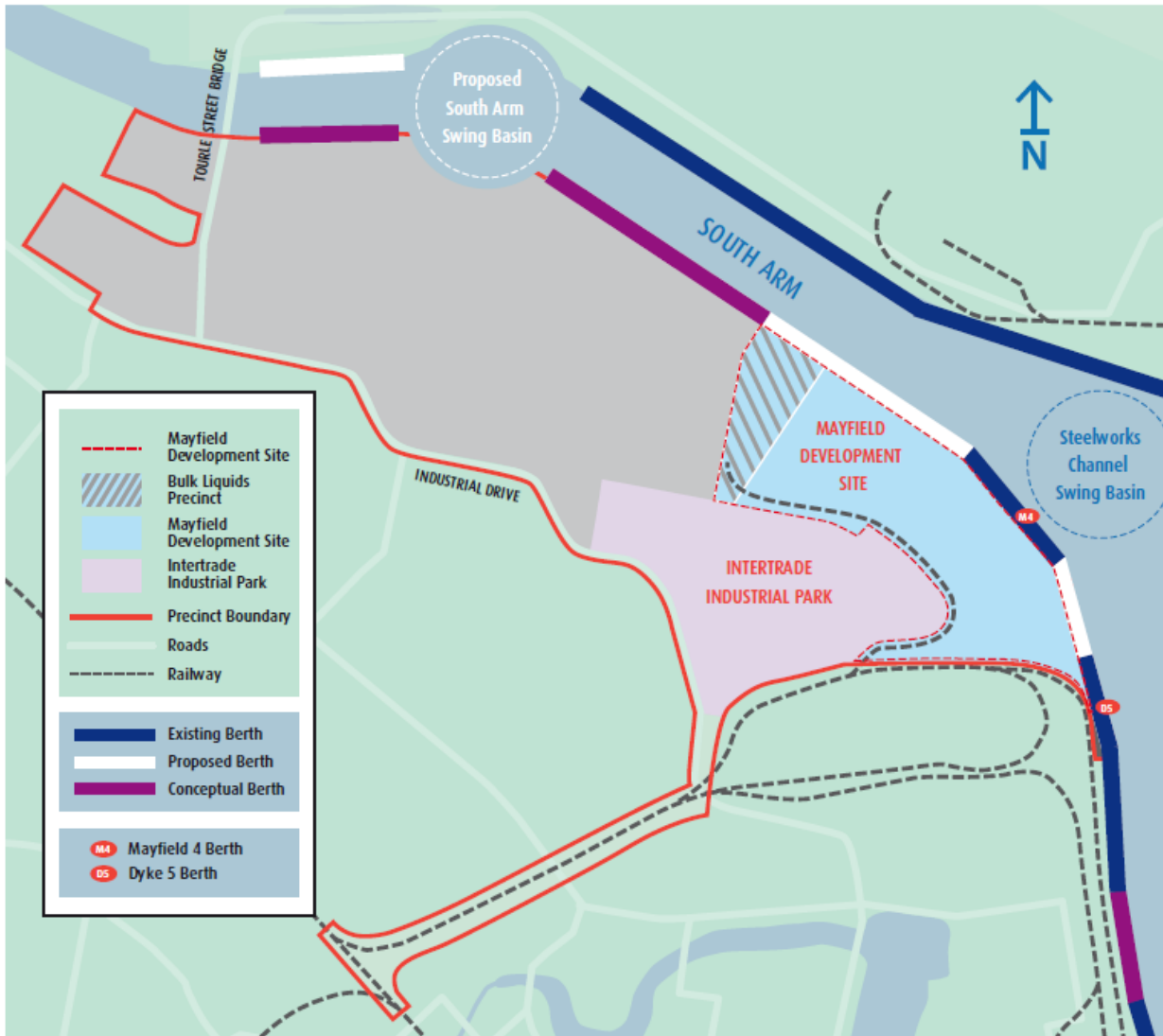
According to the Port of Newcastle's Strategic Development Plan released in February 2013, the Port of Newcastle is seeking to develop the Mayfield site for Port Uses in order to accommodate a diverse range of cargo handling infrastructure. Initial plans do not include a port that could accommodate container trade, given that Port Kembla is considered the next logical container port after Port Botany reaches capacity. However Urbis notes that the Port is currently being privatised, which may impact long-term the type of cargo handled by the port.

At this stage the Strategic Development Plan indicates that the initial redevelopment of the Mayfield Site will consist of bulk liquids and multi-purpose cargo facilities focused around bulk materials and general cargo. The Strategic Development Plan notes the following developments have taken place:

- Mayfield 4 berth was completed in 2010 and is currently being used for general cargo and container berth
- 71 hectares is available for the development of trade related infrastructure
- Stolthaven have begun construction of a fuel storage and dispatch facility within the Bulk Liquids Precinct
- Planning has commenced for a bulk cement terminal in the Bulk and General Precinct

As such the construction of an intermodal facility is unlikely in the near term or recommended for the adjacent subject site.

FIGURE 19 – PROPOSED MAYFIELD DEVELOPMENT



Source: Port of Newcastle, Mayfield Strategic Development Plan February 2013

## PORT OF NEWCASTLE – PRIVATISATION

While the privatisation of the Port of Newcastle may result in additional infrastructure upgrades (pending the eventual owners of the port) it is unlikely in the near term to result in a significant deviation from the primary use of the Port, which is bulk cargo (with its principal commodity being thermal coal). While over the long-term the Hunter's economy may achieve the 'critical mass' that would warrant TEUs being imported directly through the Port of Newcastle, it is unlikely that the Port of Newcastle would be able to capture a significant share of containerised freight to the Sydney Metropolitan Area.

In addition to this, it is Urbis' understanding through discussions with potential bidders for the Port of Newcastle that the State Government may cap TEU import / export numbers at the Port of Newcastle to maintain its strategy of promoting Port Kembla as an alternative to Port Botany. This appears to be an anti-competitive process to ourselves, and we await confirmation.

Regardless of this however Port Kembla appear to offer distinct logistical advantages in terms of road access to the ready markets and emerging industrial precincts of Western Sydney for packing an unpacking of container freight.

Port Kembla, NSW's second containerised port currently services the Sydney Metropolitan Area, and is located closer to Sydney's major industrial precincts in the city's West, which distribute a large proportion of the city's goods and freight, than the Port of Newcastle. In addition to geographical advantage, there are a number of infrastructure projects that will likely underpin Port Kembla's continued role in servicing the Sydney market, namely:

- \$3 billion investment in connecting the F6 to the Sydney Orbital, reducing travel time between Wollongong and the South Coast
- A series of key freight rail developments to support the expected growth of Port Kembla that would be delivered federally or by the private sector
- Incremental upgrades of Moss Vale to Unanderra freight line, estimated to cost around \$125 million for the Australian Rail Track Corporation to deliver
- Construction of the Maldon to Dombarton rail line to provide an improved link to Port Kembla as a longer-term project to be funded by the private sector

## HUNTER EXPRESSWAY

The Hunter Expressway is a \$1.7 billion project that involves the construction of a four lane freeway link between the F3 Freeway (now M1 Pacific Motorway) near Seahampton and the New England Highway, west of Branxton. The new expressway will provide a new east west connection between Newcastle and the Lower Hunter. It is currently in the construction stage of the project. The Australian Government is funding \$1.5 billion and the NSW Government up to \$200 million to complete the project. The project approved in 2007 consists of the following features:

- 40 kilometres of dual carriageway freeway
- 52 bridges including 840 metres of high bridges through the Sugarloaf Range
- Six grade separated interchanges located at the F3, Buchanan, Kurri Kurri, Loxford, Allandale and Branxton
- A one kilometre reconstruction of South Maitland railway, including a new railway bridge

This will provide a number benefits including:

- Reduced travel times between Newcastle and the Upper Hunter by an estimated 28 minutes
- Provide a more direct route for freight movements between the Upper Hunter and the Port of Newcastle
- Reduce the number of heavy vehicles travelling on the New England Highway through towns such as Branxton and Maitland
- Relieve congestion on the New England Highway between Weakleys Drive and Branxton
- Reduce traffic by a projected 15,000 to 30,000 vehicles per day on the New England Highway, according to projected traffic levels in 2031 noted in The Lower Hunter Transport Needs Study

As such the Hunter Expressway is likely to help catalyse industrial parks servicing freight and logistics type businesses close to its F3 Interchange such as West Wallsend and Cameron Park Business Park, in addition to the subject site which will benefit from its proximity to the Kurri Kurri interchange.

## NEWCASTLE AIRPORT

The Newcastle Airport is jointly run by the Newcastle and Port Stephens councils, via the Newcastle Airport Ltd. The airport has a 40 year lease (terminating March 2045) for 28 hectares for both the airport operations and commercial redevelopment. Every three years since 2005 Newcastle Airport Ltd undertakes an economic impact assessment of the airport, identifying economic contribution to the Hunter Region, which shows that the majority of economic benefit is derived from direct airport operations and indirectly through tourism spend.

In addition to this, Hunterland are currently developing a 120 hectare aerospace park adjacent to the adjacent Williamstown RAAF base called the Williamstown Aerospace Centre (WAC). The development

is planned to include a commercial, aerospace and support precinct and is designed to attract defence and aerospace contractors. This reflects key industrial land drivers with collocation of this the aerospace park with key infrastructure and access to customers. Key defence companies Boeing, Thales, Varleys, Forgacs, Lockheed Martin, L3 & Raytheon have their maintenance operations in the area in addition to major civilian aerospace companies such as BAE and Jetstar airline.

It is noteworthy however that many of the major civilian carriers have located their engineering and maintenance operations to the Brisbane airport which is a major hub for Virgin and a secondary hub for Qantas. This may limit the potential for the industrial precincts adjacent to the Newcastle Airport to attract additional civilian aerospace maintenance and engineering operators to the Hunterland development or the nearby Tomago industrial park.

## 5.2 INDUSTRIAL MARKET REVIEW

In reviewing the performance of the industrial market, and the likely take-up of vacant land on the subject site, vacant industrial land sales in industrial precincts with similar transport infrastructure have been analysed.

This review focuses primarily on the 'standard' industrial product offered amongst industrial precincts that have access to regional road infrastructure, given the sites access to the Hunter Expressway. Table 29 indicates that the combined Freeway Business Park / Holmswood have experienced the greatest land take up since June 2009 out of the different industrial precinct assessed.

Freeway Business Park, a Hunter Land development, is the more recent industrial release, and is being built in three precincts. Central Precinct was completed in 2005 and has limited land still available. The South Precinct comprises twenty hectares, with lots selling around \$160/sq.m, with most interest from mining and logistics companies. The North Precinct of the development is currently undergoing site clearing and is in the process of taking sales enquiries, and is set to be home for Aldi Supermarkets' second distribution centre in New South Wales.

TABLE 29 – MARKET ANALYSIS JUNE 2009 TO JUNE 2013

	TOTAL AREA (HA)	NUMBER OF SALES	AVERAGE ANNUAL TAKE-UP (HA)	AVERAGE (\$/SQ.M)	AVERAGE AREA PER SALES (SQ.M)	SUM OF SALES (\$ MILLION)
<b>Tomago</b>	8.3	18	2.1	\$112	4,623	\$9.3
<b>Freeway Business Park / Holmswood<sup>1</sup></b>	21	34	5.3	\$147	6,227	\$30.1
<b>Cameron Park</b>	4.1	7	1	\$133	5,909	\$5.5
<b>Total</b>	33.4	59	8.4	\$134	5,661	\$44.9

Source: Redsquare EAC 2013

<sup>1</sup>Does not include sale of 53 Weakleys Drive (6.3ha) or 27 Canavan Drive (15ha), which are outliers and older sales

The Freeway Business Parks / Holmswood have good access to infrastructure have achieved an average take up 5.3 ha since June 2009. This take-up rate is a 'conservative' estimate and does not take into account the sales of 53 Weakleys Drive and 27 Canavan Drive in June 2009-10 which comprise 21.3 ha of vacant land, which if included will take the average take-up rate to 10.5 ha per annum.

Given the transport and distribution focus of many of the freeway / highway business parks reviewed it would be expected that the majority of lots over 8,000 sq.m, with notable recent sales of lots up to 18,000sq.m, would accommodate larger warehouse / distribution users.

It is noteworthy however that the average size of land sold within the Holmswood / Freeway Business Parks in Beresfield between June 2012-13 was 6,750sq.m in size, which may indicate a market exists for smaller operators seeking sites with strong connection to transport infrastructure and the highway / freeway road network in addition to larger freight and warehouse operators.

It would be expected that general industry / light industrial operators would primarily be accommodate on lot sizes under 4,000 sq.m, which may comprise construction and building supply businesses. This aligns with industry sector forecasts that indicate construction and freight and logistics industries will continue to grow till 2031.

Tomago on the other had sales ranging from 2,000 sq.m to 1.4ha over the last 4 years, with more recent sales from June 2012-13 ranging from 3,000 sq.m to 8,000 sq.m. This indicates that the precinct has not recently attracted large heavy industrial manufacturers that would require a large site, including buffer area, rather attracted smaller industrial businesses.

Tomago would however be considered the main precinct competing for manufacturing tenants / owner occupiers. It is currently home to a mix of local owner occupiers, national companies as well as support and allied companies to the aluminium plant. The surrounding industrial occupiers include Girotto Precast Concrete, Williams River Steel, Omega Chemicals, Minmet Operations, SMV Specialist Mini Vehicles, Komatsu and Forgacs Naval shipyard. Of significance to the locality is the development approval granted on 29th January 2009 for a new bus manufacturing plant, with Volgren completing in October 2009.

Based on the sales analysis conducted, Table 30 outlines the indicative scale and value range for the subject site.

TABLE 30 – INDICATIVE PRICE POINTS AND SCALE

SCALE CONSIDERATIONS (SQ.M)	INDICATIVE VALUE RANGE (\$/SQ.M)
<4,000	\$170 - \$220
4,000 - 8,000	\$130 - \$170
8,000-18,000	\$100 - \$130
>18,000	\$100

### 5.3 INDUSTRIAL DRIVERS ASSESSMENT

As discussed in section one there are a number of key development drivers that underpin industrial precinct's success. These include:

- Access to customers / end users
- Connectivity and access to key transport routes (roads, rail, port facilities, suppliers, etc.)
- Accessibility to a local workforce
- Connection to high population growth areas
- Price / affordability and size / format of employment land being suitable to target industries / industrial operators
- Opportunities for industry 'agglomeration' / economies of scale

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:



- Economic growth – including broad macroeconomic indicators and industry specific performance
- Population growth and demographics – this encompasses both the location of the customer base and the workforce
- Infrastructure – allows for efficiency of operations and efficiency of connections throughout the supply chain
- Competing industrial precincts – 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

This section will assess the subject site against these drivers, as well as summarise the quantitative measures (e.g. land use forecasts and estimated sales rate).

TABLE 31 – LOCATIONAL INDUSTRIAL DRIVERS

INDUSTRY	WORKFORCE	ECONOMIC DRIVERS	INDUSTRY CO-LOCATION	INFRASTRUCTURE	FORECAST DEMAND	PROCEED
<b>General Industrial</b>	√	√	√	√	√	√
	Access to a local blue collar workforce in Cessnock	Residential and non-residential construction sectors expected to continue to perform well over the long-term	Other industrial precincts accessible via local / highway road network	Would benefit from access to road, and potentially rail transport infrastructure	Construction / building suppliers will expand with residential and non-residential construction	Access to transport infrastructure and a blue collar workforce
<b>Manufacturing / Heavy Industrial</b>	√√	-	√√	√	-	-
	Existing manufacturing workforce	Manufacturing is a trade exposed sector, which has been declining as a share of employment in Australia, and is steady in the Lower Hunter	Potential benefits associated with on-site power generation	Would benefit from access to road, and potentially rail transport infrastructure	Manufacturing expected to increase slightly, with its share of total employment falling slightly	Market demand may limit the potential of this option. Heavy industrial co-locating has been achieved in other precincts (e.g. Swanburn)
<b>Freight and Logistics</b>	√	√√	√√	√√	√√	√√
	Access to a local blue collar workforce in Cessnock	Growing imports increase demand for freight and logistics services	Other industrial precincts accessible via local / highway road network	Multi-modal freight would support a variety of Freight and Logistics businesses	Freight and Logistics jobs are expected to grow strongly over the next 20 years	Industry growth, economic structural change and transport infrastructure
<b>Intermodal Facilities / Rail Maintenance</b>	√	-	√√	√√	√√	√
	Access to a local blue collar workforce in Cessnock	Demand for intermodal facilities will be dependent on containerised freight from the Port of Newcastle	Both rail and road infrastructure accessibility, would likely attract Freight and Logistics businesses	Rail and road infrastructure accessible from the subject site	Demand for freight and logistics services are expected to grow strongly over the next 20 years	Contingent on Port of Newcastle becoming a containerise port
<b>Business Parks</b>	×	√	×	×	√	×
	Low proportion of local white collar workers	Structural changes in the economy indicate services will become a larger % of jobs	No existing amenity that would attract office development or tenants	No public transport access needed to support office workers	Professional services and office based employment forecast to grow	Site is not accessible via public transport or support by office amenity
<b>Data Centre</b>	×	√	-	√	-	×
	Low proportion of local white collar workers / specialised I.T workers			Access to the NBN fibre network will provide high bandwidth and connectivity		Other locations closer to a white collar workforce available, will also have NBN fibre access

Source: Urbis

## 5.4 SUMMARY

### MAJOR INFRASTRUCTURE PROJECTS

- Strong transport infrastructure in rural areas is not a guarantee of a strong take-up – as shown in the regional industrial precincts in Section 1.3
- Erskine Park / Eastern Creek, which has attracted a significant uplift in both the take-up of industrial land and value upon the completion of the M7
- There is potential for catalyst infrastructure projects to improve the commercial viability of existing and potential industrial precincts. With specific relevance to the future development of industrial precincts are road infrastructure upgrades such as the F3 extension and Hunter Expressway
- These transport infrastructure projects are likely to drive growth in the freight transport and storage sector in the Lower Hunter. This will drive demand for industrial land in the region
- The Port of Newcastle will continue to require port services and warehousing for imports and exports. Planned expansion and upgrading of berths will likely result in an increase in demand for industrial land close to the Port

TABLE 32 – INFRASTRUCTURE ASSESSMENT, SUBJECT SITE

INFRASTRUCTURE	IMPACT ON SUBJECT SITE
<b>Hunter Expressway / Kurri Kurri half-interchange</b>	√√
	The Kurri Kurri half interchange will improve the accessibility of subject site to the Hunter's highway / freeway network, reducing the cost of freight and logistics, and making customers more accessible
<b>Maitland Railway</b>	√
	Provides an opportunity for the subject site to provide intermodal freight services, not currently available within the Lower Hunter. It also provides the option for maintenance facilities to be located on site, a superior location than the existing. This will be contingent however on the Port of Newcastle becoming containerised and further upgrades to the Maitland line's connection to the Westward line and coal freight.
<b>F3 Upgrade</b>	√
	While not directly accessible by site, improves the north-south connection from where the F3 and the Hunter Expressway intersect
<b>Kooragang Coal Services Terminal</b>	-
	May increase coal freight, which may increase demand for train maintenance and servicing over the long-term
<b>Mayfield Development – Port of Newcastle Strategic Development Plan</b>	-
	Increasing the amount of competition from other industrial precincts, however if includes eventual containerised may underpin a potential intermodal on the subject site

## INDUSRIAL MARKET REVIEW

The analysis of market data indicates that given the site's location adjacent to the Hunter Expressway, ability to offer flexible lot sizes (due to its consolidated land ownership) and the expected growth in the freight and logistics and construction sectors, that the site cater to larger warehouse and distribution operators while also providing smaller sized options. The following price and scale are recommended as suitable for the subject site:

TABLE 33 – INDICATIVE PRICE POINTS AND SCALE

SCALE CONSIDERATIONS (SQ.M)	INDICATIVE VALUE RANGE (\$/SQ.M)
<4,000	\$170 - \$220
4,000 - 8,000	\$130 - \$170
8,000-18,000	\$100 - \$130
>18,000	\$100

In addition to this, the take up rate has been considered for the subject site. All three precincts have a combined 8.4 ha per annum, which increases to 13.6 ha per annum if the sales in larger sales in the Freeway Business Parks at 53 Weakleys Drive or 27 Canavan Drive are included. While it would not be expected that the subject site would capture this whole market, as these precincts are developed out demand for vacant industrial land will seek out other locations. The characteristics of the subject site, due to immediate collocation to the Hunter Expressway could potentially achieve take up rates similar to the Freeway Business Park for its standard industrial product, between 5.3 hectares and 10.5 hectares per annum net, and 7.5 hectares to 15 hectares gross (including roads, verges etc).

## INDUSTRIAL DRIVERS ASSESSMENT

This take up rate will depend on the eventual characteristics of the subject site compared to competing industrial precincts. Table 31 outlines its characteristics compared to the different industrial and commercial land uses being assessed, indicating that:

- In addition to the standard industrial operator and freight and logistics businesses that would be attracted to the site, there is potential to accommodate intermodal and rail maintenance facilities on site
- There would appear to be more immediate potential for a small scale rail maintenance yard, with land reserved for expansion pending future rail connections to the westward line and northern to line to Brisbane. The potential intermodal facility is dependent on a substantial increase in containerised trade being imported through the Port of Newcastle. We note however that the current policy is to favour expansion of Port Botany and Port Kembla over expansion of the Port of Newcastle, which may limit or a least delay the opportunity for a new intermodal terminal
- Both these uses would potentially increase the land-take within the subject site, expected to require in excess 40 hectares of land in close proximity to Maitland railway through the subject site
- Given the gross developable area of the subject site for industrial / employment land is approximately 250 hectares, if a rail maintenance yard was developed, with the remaining land would comprise 210 hectares. Based on the approximate gross take-up of land, this would be expected to take between 14 and 28 years to develop.

## 5.5 REVIEW OF INFRASTRUCTURE OPPORTUNITIES

We note that we have been asked to consider the specific value of additional infrastructure enhancements to the site which we make the following comments on:

- **The Hunter Expressway upgrade** – as discussed, this will improve the accessibility of the site and will open up opportunities for the site to attract industrial development from sectors that otherwise would not have considered this location. As such there may be opportunities for the site to be attractive to warehouse and transportation businesses that are reliant on accessibility and for businesses that service the mines due to increased accessibility to areas in the Upper Hunter.
- **Upgrade of the Hart Road interchange from half to full** – this opportunity would be of particular relevance for large scale high volume distribution facilities (such as supermarket distribution centres) or a rail intermodal terminal (discussed below). There will be a limited number of users that would seek this type of accommodation in the Lower Hunter and therefore the upgrade would most likely be proposed in response to the need for such a facility. In the absence of a large scale high volume user, then the existing proposed transport access network would be suitable for most users.
- **Connection to the South Maitland railway line** – this will provide two distinct opportunities:
  - i. Rail maintenance and storage for coal freight trains, Through discussions with Lycopodium, there is a clear opportunity for the site to provide train storage and maintenance facilities which indicatively could occupy a site of approximately 40 hectares
  - ii. Intermodal rail terminal. This site appears to be very well positioned to accommodate a rail intermodal terminal given its proximity to the Hunter Expressway and its position on the South Maitland rail line. It is noted however that this is somewhat dependent on containerised freight volumes growing at the port of Newcastle.
- **Access to cheaper energy sources (e.g. gas and renewables)** – From our review of other facilities such as the Swanbank Enterprise Park in South East Queensland there may be some users that could benefit from “over the fence” energy supply agreements, however these users are few and in a difficult where manufacturing is the major source of demand (which is in a period of decline). Overall we would see the availability of energy as a positive and would be seen as a potential benefit to most potential tenants.
- **The impact on energy intensive uses** – as discussed above, energy intensive users are in manufacturing and are having difficulty competing with lower priced import markets. As such we would see there being limited opportunity for a large number of energy intensive users being available to the site, with many manufactures facing issues familiar to Hydro Aluminium.
- **Opportunities arising from the connection to the National Broadband Network (NBN)** – connectivity to internet is a growing requirement for all businesses, from office based environments to transport & distribution facilities where orders are tracked electronically. As such, connection to internet services including the National Broadband Network will be an important infrastructure element going forward. Specific opportunities such as data centres may have other requirements such as accessibility to specialist staff and clients that may influence their location decision more than pure land price.

## 6 Summary

The Industrial Land Analyses' key findings indicate that the subject site is a viable industrial precinct able to attract a standard industrial and freight / logistics tenants, in addition to having potential to accommodate rail maintenance / servicing yard and an intermodal terminal:

- Construction and freight and logistics growth over the next 20 years is expected to underpin growth for industrial land, specifically distribution centres, warehousing and building services / supplies.
- The combination of consolidated ownership, strong connection to transport infrastructure, access to a blue collar workforce underpin the sites fundamentals as an industrial estate
- While the supply of zoned land within the Lower Hunter is higher than forecast demand over half of this located in the Tomago Industrial Area, the Hunter Economic Zone (HEZ) and Singleton Green Industrial Estate. It is possible that not all of the current and proposed supply is seen as being suitable for servicing the demand which is expected to come mainly from the transport and storage, construction and mining industries. These businesses typically require large land parcels, and access to transport routes is of course a key requirement for transport and storage, and mining businesses
- In addition to this the potential for the site to develop a rail maintenance yard would take up a significant portion of the subject site, in addition to demand from standard industrial users, however should be initially kept to small maintenance yard with a single connection to the Maitland Railway. Expansion of this should be contingent on future connections to the North Coast line and Western line
- There may be potential also to attract heavy industrial users through locating a sustainable power generator onsite. This may have a significant land take however, with CS Energy Power station taking a 200 hectare site in the Swanbank case study discussed in Section 1.3.2. The land take of the potential waste to energy facility needs to be balanced against the potential land sales to other industrial users, given the developable area of the subject site is 250 hectares
- The Swanbank case study does demonstrate however that this type of facility can provide an incentive to manufacturing facilities to co-locate. However the outlook for the manufacturing may inhibit the depth of the market available in the Lower Hunter to attract to the site, with the manufacturing sector expected to fall from 11.1% in 2011 to 9.8% in 2031. This may preclude manufacturing as a potential development on the subject site

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## Appendix A

## Land Use – by Local Government Area

## Land Use Demand (Hectares)

### CESSNOCK

	2011	2016	2021	2026	2031	Increase
Industrial	207	233	248	280	313	106
Office	28	32	36	40	43	15
Retail	36	41	43	47	49	13
Education	24	25	29	32	35	11
Health	20	24	27	29	32	11
Other	32	35	36	38	40	8
Off-site	0	0	0	0	0	0
Home	0	0	0	0	0	0
<b>Total</b>	<b>347</b>	<b>389</b>	<b>419</b>	<b>466</b>	<b>512</b>	<b>166</b>

## Land Use Demand (Hectares)

### LAKE MACQUARIE

	2011	2016	2021	2026	2031	Increase
Industrial	716	723	703	687	678	-38
Office	120	133	143	152	159	39
Retail	133	144	147	150	152	19
Education	90	93	104	112	117	27
Health	82	92	100	106	110	28
Other	72	74	74	76	77	5
Off-site	0	0	0	0	0	0
Home	0	0	0	0	0	0
<b>Total</b>	<b>1,213</b>	<b>1,259</b>	<b>1,271</b>	<b>1,284</b>	<b>1,294</b>	<b>81</b>

## Land Use Demand (Hectares)

### MAITLAND

	2011	2016	2021	2026	2031	Increase
Industrial	254	278	273	279	290	36
Office	54	60	66	71	75	22
Retail	55	61	64	67	70	14
Education	38	40	46	50	54	17
Health	30	35	39	43	46	15
Other	29	27	70	32	33	4
Off-site	0	0	0	0	0	0
Home	0	0	0	0	0	0
<b>Total</b>	<b>459</b>	<b>502</b>	<b>557</b>	<b>542</b>	<b>567</b>	<b>108</b>

## Land Use Demand (Hectares)

### NEWCASTLE

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	<b>2011</b>	<b>2016</b>	<b>2021</b>	<b>2026</b>	<b>2031</b>	<b>Increase</b>
Industrial	961	963	966	975	994	<b>33</b>
Office	255	291	321	346	364	<b>110</b>
Retail	147	160	165	169	171	<b>24</b>
Education	154	160	179	194	204	<b>50</b>
Health	190	214	233	246	253	<b>64</b>
Other	112	118	120	123	125	<b>13</b>
Off-site	0	0	0	0	0	<b>0</b>
Home	0	0	0	0	0	<b>0</b>
<b>Total</b>	<b>1,819</b>	<b>1,905</b>	<b>1,984</b>	<b>2,053</b>	<b>2,112</b>	<b>294</b>

## Land Use Demand (Hectares)

### PORT STEPHENS

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	<b>2011</b>	<b>2016</b>	<b>2021</b>	<b>2026</b>	<b>2031</b>	<b>Increase</b>
Industrial	308	317	318	318	327	<b>19</b>
Office	64	72	78	83	88	<b>24</b>
Retail	48	53	55	58	60	<b>12</b>
Education	25	26	29	32	33	<b>8</b>
Health	0	0	0	0	0	<b>0</b>
Other	55	60	64	67	71	<b>16</b>
Off-site	0	0	0	0	0	<b>0</b>
Home	0	0	0	0	0	<b>0</b>
<b>Total</b>	<b>500</b>	<b>528</b>	<b>543</b>	<b>557</b>	<b>579</b>	<b>79</b>

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