

- Government policy and increasingly market forces, including congestion and climate change policies and upward pressure on energy prices, is prompting a **greater modal shift in focus from road to rail freight**. This may present an increase in opportunities for well-located Wyong employment lands, particularly with growing potential for container terminals in Newcastle to take pressure off Port Botany. The Australian and NSW governments are working together to increase the number of freight trains operating along the Sydney-Newcastle rail corridor from 29 per day to 44 and boost overall freight capacity by 50 percent. The plan entails a significant upgrade of the corridor between North Strathfield and Newcastle, including a freight underpass in North Strathfield, a new freight track between Epping and Pennant Hills and two passing loops at Gosford.

According to consultation with business and government stakeholders, the industrial market is currently experiencing slow demand and the major economic reasons for this are the sluggish residential construction industry, flat affordable land, location and transport infrastructure. It should be noted that these sentiments follow the GFC from which recovery has been slow. The most appropriately targeted industries for future expansion in the Wyong Shire are flagged as freight and logistics, hi-tech and value add manufacturing and development that leverages the NBN. Opportunities to the industrial land market relate to population growth, the residential construction sector, enhanced connections from infrastructure investment (including F3 and freight rail corridor improvements) and the NBN rollout. Threats come from a lack of coordinated planning and infrastructure cost provision pressures.

In terms of strategic land use policy, the state and regional planning framework designate principles for industrial lands, business parks, bulky good retail and for rezoning industrial land to other uses. The type of industries targeted for the Central Coast and Wyong Shire – and relating to industrial lands – include logistics and food cluster, manufacturing, health research, green industries and large business services.

Comparable industrial land was identified as Morisset industrial area from the Lake Macquarie LGA and Lisarow, West Gosford and Somersby from the Gosford LGA.

4 CAPACITY AND DEMAND ANALYSIS

4.1 Floorspace capacity and demand

The analysis in this section relies on abstract models and a range of reasonable assumptions. Changes to general economic conditions and/or future investor, council or government decisions could quickly undermine the assumptions made and thereby impact on the development of employment lands in ways not anticipated by the analysis.

Capacity assessment

The assessment of the supply of employment lands in Wyong LGA was informed by the land audit³⁰ and constraints analysis. The constraints analysis examined the extent to which each precinct is constrained by environmental factors such as flood, bush fire, mine subsidence, closed landfill, bio-diversity and contamination (an analysis of infrastructure constraints informed the rating of precincts from a demand perspective and is utilised later in the demand allocation section). Essentially, there are three types of land available: vacant unused floorspace, highly constrained vacant (un-developed) land and low-level constrained (un-developed) land. For the supply-side analysis **only vacant low-level constrained lots** in industrial precincts (existing and potential) are considered. A spectrum of constrained land exists, from those lots that are partially covered by a minor constraint to those that are completely constrained by major constraint or numerous constraints. For the purposes of this analysis, lots with a constraint score less than (or equal) to negative four (where more negative implies more constrained) are deemed highly constrained. This reflects the fact that lots that are constrained more than the median constraint level (of -4) are in general less likely to enter future supply³¹. Lots with a constraint score more than negative four are considered to have a 'low level' constraint.

Based on each precinct's overall constraint-score³², two types of Floorspace Ratios (FSR) are applied to vacant low-level constrained land to establish development potential or capacity.

- If a precinct's overall constraint-score is less than -3, then its current actual FSR is applied.
- If a precinct's overall constraint-score is higher than or equal to -3, then its current actual FSR increased by 50 percent is applied.

This rule embodies the fact that less constrained industrial precincts (as captured by the overall score) are likely to accommodate greater floorspace due to the low relative cost of land preparation. There is one exception to this rule. For Tuggerah Straight, its current actual FSR is increased by 75 percent, in recognition of its strategic location and scope for additional intensification between Wyong and Tuggerah Centres.

In addition, based on Council advice, Buttonderry WDF is assumed to have 21 hectares of vacant low-level constrained land. Moreover, where there is no current floorspace in the precinct, the LGA average is used. The adjusted FSR is applied to the low-level constrained land (lots with a score above -4) to derive the floorspace capacity in each precinct. Note that the four potential precincts in the northern part of Wyong Shire: Darkinjung, Bushells Ridge North East, Hunter Land, and Wallarah No. 2 Coal Site are all part of the Bushells Ridge area. As such,

³⁰ A detailed method outlining the land audit process can be found in Appendix 4.

³¹ In addition to the extent and magnitude of the constraint, the underlying value of land and demand also affects the likelihood of development of a constrained site. A high land value and strong demand means that more significant and costly constraints can be overcome because the higher return can offset the higher costs.

³² The overall constraints ranking for the precinct is based on the lot level assessment of the constraint dimensions (flood, bush fire, mine subsidence, closed landfill, bio-diversity and contamination) and ranges from 0 to negative 8. Where 0 is least constrained and negative 8 is the most constrained. The overall precinct constraint scores are based on each lot's constraint score and its lot area. In other words, the overall constraint score for the precinct is the weighted average constraint score based on the lots in the precinct.

'Bushells Ridge – Remainder' is the remaining area within the Bushells Ridge area. This implies that the 'Remainder' (in addition to areas not captured by the four potential precincts) captures a large area of NWSSP 10 - Bushells Ridge South.

It should be noted that more detailed analysis on a precinct by precinct basis is required to assess constraints to particular development proposals. The constraints analysis in this report is general only and is used as a guide to identify broad development potential.

TABLE 8. FLOORSACE CAPACITY BY PRECINCT

	Current FSR (or LGA average)	Low-level constrained land (sqm)	Overall constraint score	FSR applied	Floorspace Capacity (sqm)
Existing precincts					
Bateau Bay Industrial	0.18	4,794	-4.00	0.18	887
Berkeley Vale Industrial	0.23	87,095	-1.29	0.35	30,664
Bushells Ridge - remainder	0.18	476,874	-0.95	0.28	132,320
Charmhaven Industrial	0.16	7,867	-0.98	0.24	1,850
Doyalson Industrial	0.13	44,180	-2.03	0.19	8,561
Fountaindale Industrial	0.38	5,100	-2.24	0.56	2,874
Gwandalan Industrial	0.07	9,943	-1.63	0.11	1,095
North Wyong Industrial	0.22	306,889	-1.21	0.33	100,068
Long Jetty Industrial Area	0.21	0	0.00	0.32	0
Curimbah Industrial	0.09	44,102	-2.62	0.14	6,150
Tuggerah Business Park	0.48	114,419	-0.71	0.72	82,659
Tuggerah Station Industrial	0.17	116,963	-3.30	0.17	19,667
Tuggerah Straight	0.21	39,172	-3.24	0.37	14,303
Tumbi Gardens Industrial	0.37	697	-1.00	0.55	383
WEZ Airport Lands	0.18	401,287	-1.27	0.28	111,346
WEZ North West - Warner Industrial Park	0.18	771,100	-1.22	0.28	213,960
WEZ Sparks Road North	0.16	1,396,590	-1.03	0.24	339,588
WEZ Warnervale Business Park	0.44	82,895	-0.62	0.67	55,805
Total existing precincts		3,909,969			1,122,178
Potential precincts					
Buttonderry WDF	0.18	210,000	n.a.	0.28	58,269
Craigie Avenue	0.18	40,730	-0.87	0.28	11,301
Darbinjung*	0.18	309,688	-1.06	0.28	85,930
Hunter Land*	0.18	0	-2.79	0.28	0
NWSSP Bushells Ridge North East*	0.18	152,528	-1.19	0.28	42,323
Darbinjung South	0.18	433,650	-2.00	0.28	120,326
NWSSP Doyalson East	0.18	331,174	-2.58	0.28	91,892
NWSSP Doyalson North East	0.18	356,180	-3.14	0.18	65,887
NWSSP Doyalson South West	0.18	533,442	-2.19	0.28	148,016
NWSSP Doyalson West	0.18	316,197	-1.73	0.28	87,736
NWSSP Hue Hue Road	0.18	382,540	-1.66	0.28	106,145
NWSSP Lake Munmorah	0.18	1,093,324	-2.20	0.28	303,368
NWSSP Warnervale North East	0.18	505,154	-2.35	0.28	140,167
NWSSP Warnervale North West	0.18	712,950	-1.86	0.28	197,824
NWSSP Warnervale South West	0.18	321,547	-2.00	0.28	89,221
Wallarah No.2 Coal Site*	0.18	1,866,015	-1.93	0.28	517,769
Total potential precincts		7,565,119			2,066,174
Total LGA		11,475,088			3,188,352

Source: SGS Economics and Planning, 2012.

*Indicates that the precinct already has an industrial zoning but no current development.

In addition to the environmental constraints analysis, an assessment of the amount of serviced land (water and sewer infrastructure) has been undertaken. The Wyong Shire Council provided estimates of the level of servicing at each existing and potential precinct (Table 9). Each precinct was given a ranking for water and sewer infrastructure, from zero to negative three, representing its level of services availability. A score of zero indicates that the

infrastructure item is available and ready to be used, whereas negative three indicates significant extension and/or augmentation of infrastructure is required.

TABLE 9. AVAILABLE SERVICES BY PRECINCT

Precinct	Infrastructure ranking		Comment	Served?
	Water	Sewer		
Bateau Bay Industrial	0	0	Adjoining services available	Yes
Berkeley Vale Industrial	0	0	Already fully serviced	Yes
Bushells Ridge	-3	-3	No existing services. Requires crossings under Link Road, plus new pump stations.	No
Charmhaven Industrial	-1	-2	Extend water mains. Extensive sewer work.	Yes
Craigie Avenue	0	0	Adjoining services available	Yes
Doyalson Industrial	-1	-1	Road Crossing for water. Adjoining services required.	Yes
Fountaindale Industrial	0	0	Already fully serviced	Yes
Gwandalan Industrial	0	0	Already service	Yes
NWSSP 16 - Lake Munmorah	-2	-3	New SPSs required	No
Long Jetty Enterprise Corridor	0	0	Already fully serviced	Yes
Long Jetty Industrial Area	0	0	Already fully serviced	Yes
North Wyong Industrial	0	0	Existing infrastructure	Yes
Ourimbah Industrial	-1	-1	Extensions required to service northern portion	Yes
Tuggerah Business Park	0	0	Already fully serviced	Yes
Tuggerah Station Industrial	0	-1	Existing private SPSs	Yes
Tuggerah Straight	0	-1	WS9 requires upgrade	Yes
Tumbi Gardens Industrial	0	0	Already fully serviced	Yes
WEZ Warnervale Business Park	0	0	Already fully serviced	Yes
WEZ North West - Warner Industrial Park	-3	-3	Require extension or W&S services including F3 Crossing	No
WEZ Airport Lands	-1	-1	Extension of nearby services Requires extension of water and sewer services (including 1-2 pump stations)	Yes
WEZ Sparks Road North	-3	-3	No existing services	No
NWSSP 1 - Hue Hue Road	-3	-3	No existing services	No
NWSSP 4 - Warnervale South West	-2	-3	Extension of services required	No
NWSSP 6 - Warnervale North West	-2	-3	Extension of services required	No
NWSSP 8 - Warnervale North East	-1	-2	Extension of water mains in vicinity of development	Yes
NWSSP 11 - Bushells Ridge North East	-3	-3	No existing services	No
NWSSP 12 - Doyalson South West	-2	-2	Crossing under Link Road required	No
NWSSP 13 - Doyalson West	-1	-2	No crossing required for water main	No
NWSSP 14 - Doyalson East	-1	-1	Nearby infrastructure available for connection	Yes
NWSSP 15 - Doyalson North East	-1	-2		Yes
Buttonderry WDF	-3	-3	No existing services	No
Hunter Land	-3	-3	No nearby services	No
Darkinjung	-3	-3	No existing services	No
Darkinjung South	-3	-3	No existing services	No
Wallarah No.2 Coal Site	-3	-3	No nearby services	No

Source: Wyong Shire Council, 2012.

To calculate the amount of serviced land, the level of servicing for each precinct was simplified to a binary 'yes' or 'no' measurement; 'yes' indicating a precinct is serviced and 'no' suggesting a precinct is not serviced. Table 10 reveals the amount of serviced land in each precinct.

There is a total of 158 hectares of serviced land in current precincts (Table 10). Of this 127 hectares is low-level constrained (around one-third of existing low-level constrained land) and 31 hectares is highly constrained. There is 362 hectares of unserviced land, of which 265 hectares is low-level constrained and 98 hectares is highly constrained. Based on the serviced and low-level constrained land, it can be concluded that there is around 127 hectares of land – around one-quarter of all land in existing precincts – available for development.

There is a total of 124 hectares of serviced land in potential precincts (Table 10). Of this amount, the vast majority is low-level constrained with only 0.3 hectares being considered as highly constrained. There is 924 hectares of unserviced land in potential precincts, of which 633 hectares is low-level constrained and 291 hectares is highly constrained. Again, using the serviced and low-level constrained land as a measure of available land, there is around 123 hectares of unzoned land (around 12 percent of all land in potential precincts) ready for development.

As a whole, there is a total of 250 hectares of serviced, low-level constrained in the Wyong LGA; representing around 16 percent of land in both existing and potential precincts. Importantly, only 127 hectares of this is currently zoned industrial and readily available for development.

Once take-up rates are calculated, the following NSW Employment Lands Taskforce best-practice benchmarks for employment land supply will be tested against Wyong LGA's supply:

- Undeveloped zoned land and serviced: 5-7 years
- Undeveloped zoned land not serviced: 8-10 years
- Strategy identified land: 15 years

TABLE 10. AMOUNT OF SERVICED LAND BY PRECINCT

Precinct	Serviced	Low-level constrained	Highly constrained	Total
Existing precincts				
Bateau Bay Industrial	Yes	0.5	0.0	0.5
Berkeley Vale Industrial	Yes	8.7	10.3	19.0
Charmhaven Industrial	Yes	0.8	0.0	0.8
Doyalson Industrial	Yes	4.4	0.0	4.4
Fountaindale Industrial	Yes	0.5	0.0	0.5
Gwandalan Industrial	Yes	1.0	0.0	1.0
Long Jetty Industrial Area	Yes	0.0	0.0	0.0
North Wyong Industrial	Yes	30.7	1.4	32.1
Ourimbah Industrial	Yes	4.4	0.0	4.4
Tuggerah Business Park	Yes	11.4	0.0	11.4
Tuggerah Station Industrial	Yes	11.7	0.1	11.8
Tuggerah Straight	Yes	3.9	0.5	4.4
Tumbi Gardens Industrial	Yes	0.1	0.0	0.1
WEZ Airport Lands	Yes	40.1	3.3	43.4
WEZ North West - Warner Industrial Park	No	77.1	6.8	83.9
WEZ Sparks Road North	No	139.7	2.3	142.0
WEZ Warnervale Business Park	Yes	8.3	15.7	24.0
Bushells Ridge - remainder	No	47.7	88.8	136.4
Total serviced land	Yes	126.5	31.4	157.9
Total unserviced land	No	264.5	97.9	362.3
Subtotal	-	391.0	129.2	520.2
Potential precincts				
Craigie Avenue	Yes	4.1	0.0	4.1
NWSSP 1 - Hue Hue Road	No	38.3	0.2	38.5
NWSSP 4 - Warnervale South West	No	32.2	0.3	32.4
NWSSP 6 - Warnervale North West	No	71.3	4.4	75.6
NWSSP 8 - Warnervale North East	Yes	50.5	0.1	50.6
Wailarah No.2 Coal Site	No	186.6	12.4	199.0
NWSSP 11 - Bushells Ridge North East	No	15.3	0.0	15.3
NWSSP 12 - Doyalson South West	No	53.3	0.0	53.3
NWSSP 13 - Doyalson West	No	31.6	2.7	34.4
NWSSP 14 - Doyalson East	Yes	33.1	0.3	33.4
NWSSP 15 - Doyalson North East	Yes	35.6	0.0	35.6
Buttonderry WDF	No	21.0	n.a.	21.0
Darkinjung	No	31.0	241.0	271.9
Darkinjung South	No	43.4	0.1	43.5
NWSSP 16 - Lake Munmorah	No	109.3	14.2	123.5
Hunter Land	No	0.0	15.4	15.4
Total serviced land	Yes	123.3	0.3	123.7
Total unserviced land	No	633.2	290.5	923.7
Subtotal	-	756.5	290.9	1,047.4
Total	-	1,148	420	1,568

Demand assessment

The key steps involved in projecting the demand for employment lands at precinct level are as follows³³:

- Step 1: Bureau of Transport Statistics (BTS) employment forecasts by ANZSIC industry at a Travel Zone (TZ) spatial level are aggregated to line-up with industrial precincts in Wyong LGA³⁴.
- Step 2: The BTS employment projections are adjusted (upward) to account for the Central Coast Regional Strategy (CCRS) employment target.
- Step 3: Projected ANZSIC jobs are converted to Broad Land use Category (BLC) jobs at a precinct level using an ANZSIC-BLC concordance matrix (see) based on LGA-wide data collected from the land audit. See Table 11 for a description of the BLCs used.
- Step 4: Having converted the BTS ANZSIC jobs to BLC jobs, the growth rates of BLC jobs by precinct are calculated.
- Step 5: These BLC growth rates are applied to current BLC floorspace in each precinct obtained from the audit.

TABLE 11. BROAD LAND USE CATEGORIES (BLC)

Land Use Category	Description
Freight and Logistics (FL)	Warehousing and distribution activities. Includes buildings with a number of docking facilities; 'hard stand' areas with trucks or goods awaiting distribution; and large storage facilities. Warehousing and distribution is a metro level issue with activities preferably locating close to air, sea and inter-modal inland ports, or with access to the motorway system.
Local light industrial and urban support (LL)	Car service and repair; joinery, construction and building supplies; and domestic storage. Wide range of businesses that service other business (components, maintenance and support) and Subregional populations. Needed at local (LGA) to Subregional level.
Manufacturing – Heavy (MH)	Large scale production activity. Likely to be characterised by high noise emission; emission stacks; use of heavy machinery; and frequency of large trucks. Heavy manufacturing is in decline in Sydney, but will continue to cluster in some locations such as Wetherill Park, Campbelltown/ Ingleburn etc. There are strong arguments for collocation in terms of raw material delivery and to concentrate externalities (though impacts on surrounding uses are generally moderate).
Manufacturing – Light (ML)	Clothing manufacturing, boat building and electrical equipment manufacturing Small scale production, with lower noise and emission levels than heavy manufacturing.
Urban Services (US)	Concrete batching, waste recycling and transfer, construction and local and state government depots, sewerage, water supply, electricity construction yards. These typically have noise dust and traffic implications and need to be isolated or buffered from other land uses. Needed in each sub-region.
Office (O)	Administration, clerical, business services, research. Office buildings that are independent (i.e., are not ancillary to another use on site) and likely to accommodate a significant number of administration staff (>10 people).
Business / Office Parks (BP)	Integrated warehouse, storage, R&D, 'back-room' management and administration with typically a higher office component.
Retail - Main Street (RM)	Retailing services traditionally found in main street locations (e.g., supermarkets) and small cluster or strips of stores located next to a street or road.
Retail – Big Box (RB)	Large shopping complexes, including Westfield.
Retail Bulky Goods (RBS)	Typically large, one-story buildings surrounded by car-parking, usually located out of centre and in high exposure (main road) locations.
Special Activities (S)	Tertiary level education, health, and community services. Typically require strategic locations and needed in each sub-region.
Dispersed Activities (D)	Primary and secondary education, lower level health, social and community services, trades construction, other 'nomads'.
Residential (RES)	Residential development.
Accommodation (Short Term) (AST)	Hotels and Motels (not including pubs), backpacker establishments.
Car park (CP)	Stand-alone car parking stations
Vacant sites/lots (VSI)	Vacant sites
Vacant buildings (VBL)	Vacant buildings

Source: SGS Economics and Planning, 2012.

³³ It is important to note that modelling has limitations and should be viewed as a tool to inform policy decisions regarding employment land. It will be important to use the EL audit and ongoing updates as the basis to test both the modelling and policy outcomes and inform future policy decisions.

³⁴ Some TZs overlap two pre-defined precincts. Where this occurs, the BTS growth rates are treated as common to both.

This approach utilises a few key assumptions, as outlined below.

- Since employment growth rates are applied to floorspace a proportional relationship between employment and floorspace is assumed. For instance, where employment increases by 10 percent, floorspace is assumed to increase by 10 percent. This implies Constant Returns to Scale (CRS).
- It is assumed that the CRS relationship between employment and floorspace holds over time.
- Since employment growth rates are applied to current floorspace, it is assumed that the BLC profile of a precinct would not greatly change over the next 25 years.
- Since an LGA-wide ANZSIC-BLC conversion matrix is used, the translation of jobs at the precinct level reflects the broader ANZSIC-BLC relationship observed in the LGA.
- Since current floorspace supply is used as the starting point for the demand projections, it is assumed that the current employment land market is in equilibrium. That is, supply and demand are currently equal.
- Precincts with existing development are assumed to fill earlier than those adjacent which have no development even if there is little to distinguish them from a constraints or attributes perspective¹¹.

Moreover, even though the BTS projects 22,629 additional jobs between 2011 and 2036 across the LGA, it is assumed that through various policy measures outlined in the Central Coast Regional Strategy (CCRS), there would instead be 27,000 additional jobs by 2036¹² in line with the documented target. As noted in the strategy, this target is likely to be achieved through higher self-containment by creating more jobs in the LGA¹³. It is assumed that the employment profile remains unchanged as a wide range of industries would need to be impacted to achieve the policy target. The demand-side analysis discussed throughout this study incorporates the CCRS jobs target. To ensure an adequate supply of future employment land, the demand side forecast is intended to be optimistic, while estimates of future floorspace capacity are conservative.

Table 12 shows the CCRS incorporated BTS employment projections by precinct. The precincts in this table are defined by TZ and are not likely to perfectly align with the precinct boundaries used in the capacity analysis. This is not an issue since only the rate of growth in employment is used to derive the growth in floorspace. This implies that projected employment growth in adjacent TZs is likely to influence floorspace demand growth in the pre-defined precinct area¹⁴.

Based on the distribution of employment projected by the BTS, the majority of future employment is expected to occur outside the TZ-defined precincts (for example in centres and commercial areas). The majority of in-precinct employment is expected to occur in Berkeley Vale Industrial and WEZ Warnervale Business Park precincts.

The 2012 floorspace data is used as the 2011 starting point for the projections. The augmented policy adjusted employment growth rates (step 5) are applied to current floorspace to derive five-yearly floorspace projections from 2011 to 2036. Table 13 summarises the total demand for floorspace in each precinct over the next 25 years. Overall, all precincts are expected to experience growth in floorspace demand and it is projected that the LGA will require **694,821 square metres** of floorspace over the next 25 years. The last two columns highlight the top three precincts in 2011 and 2036 respectively. WEZ Warnervale Business Park, which did not feature in the top three in 2011, is expected to make up 12 percent of floorspace in 2036. This highlights how the WEZ precinct, in general, will improve in importance over time (notwithstanding significant infrastructure constraints).

¹¹ For example, Bushells Ridge is largely undeveloped except for a quarry and tile manufacturing plant in the precinct described as "Bushells Ridge remainder". Using the assumptions here this precinct will develop sooner than surrounding precincts such as the Hunter Land precinct, also in the Bushells Ridge area. Similarly in WEZ precincts such as Sparks Road and Warnervale Business Park with modest current development are assumed to develop earlier than the other precincts though in reality the development might be shared across other WEZ precincts.

¹² Note that the Strategy specifies a target of 27,000 additional jobs between 2006 and 2031. Assuming a similar rate of average growth (5,400 per annum), this implies 32,400 between 2006 and 2036. The implied job target for the period 2011 to 2036 is therefore 27,000.

¹³ This assumes that the rate of employment leakage remains unchanged.

¹⁴ Note that the TZ (Travel Zone)-defined boundaries used in this table are not less than the area of the pre-defined precinct boundaries used in the rest of the report. That is, while the precincts may include adjacent TZs (where job growth would have an influence on the pre-define precinct), they don't preclude the pre-defined precinct areas used in this study. Travel Zones (TZs) are the geographic units of the NSW Bureau of Transport Statistics' data collection, transport modelling and analysis. TZs allow for detailed spatial analysis as they are smaller than Statistical Local Areas (SLA), but generally larger than an ABS Collection District (CD) or Mesh Block (MB).

TABLE 12. EMPLOYMENT PROJECTIONS BY PRECINCT WITH EXISTING DEVELOPMENT: POLICY ADJUSTED BASELINE³⁹

	2011	2016	2021	2026	2031	2036	Change in demand 2011 - 2036	CAGR in demand 2011 - 2036	Share in 2011	Share in 2036
Bateau Bay Industrial	332	349	368	387	406	426	94	1.0%	1%	1%
Berkeley Vale Industrial	6,790	7,603	8,435	9,239	10,026	10,856	4,066	1.9%	14%	14%
Charmhaven Industrial	1,781	1,852	1,953	2,056	2,157	2,271	490	1.0%	4%	3%
Doyalson Industrial	1,072	1,135	1,220	1,311	1,405	1,506	434	1.4%	2%	2%
Fountaindale Industrial	712	733	766	801	836	875	163	0.8%	1%	1%
Gwandalan	85	91	98	105	112	119	33	1.3%	0%	0%
Long Jetty Industrial Area	335	349	367	385	404	425	89	0.9%	1%	1%
North Wyong Industrial	1,332	1,396	1,471	1,624	1,787	1,969	636	1.6%	3%	3%
NWSSP - Bushells Ridge South	411	926	1,304	1,628	1,952	2,175	1,764	6.9%	1%	3%
Ourimbah	1,234	1,331	1,448	1,573	1,702	1,838	604	1.6%	3%	2%
Wyong LGA Remainder	26,090	28,077	30,287	32,585	34,874	37,315	11,225	1.4%	53%	49%
Tuggerah Business Park/Station Industrial	2,976	3,250	3,530	3,813	4,088	4,377	1,401	1.6%	6%	6%
Tuggerah Straight	2,533	2,748	2,980	3,208	3,431	3,671	1,138	1.5%	5%	5%
Tumbi Gardens Industrial	1,450	1,541	1,654	1,774	1,893	2,020	571	1.3%	3%	3%
WEZ Sparks Road North	493	1,020	1,412	1,796	2,099	2,367	1,874	6.5%	1%	3%
WEZ Wannervale Business Park	1,726	2,849	2,860	3,318	3,782	4,143	2,416	3.6%	3%	5%
Total	49,353	54,753	60,153	65,553	70,953	76,353	27,000	1.8%	100%	100%

Source: SGS Economics and Planning, 2012, underlying growth based on BTS, 2009 augmented by SGS Economics and Planning in line with CCRS.

TABLE 13. TOTAL FLOORSPACE DEMAND BY PRECINCT: POLICY ADJUSTED BASELINE

	2011	2016	2021	2026	2031	2036	Change 2011 - 2036	CAGR 2011 - 2036	2011 Share	2036 Share
Berkeley Vale Industrial	254,299	274,383	297,739	321,921	345,611	371,315	117,016	1.5%	22%	20%
Bushells Ridge	22,108	49,548	69,283	85,917	102,278	113,368	91,260	6.8%	2%	6%
Charmhaven Industrial	119,174	125,705	133,626	141,316	148,859	157,176	38,002	1.1%	11%	9%
Doyalson Industrial	9,403	9,788	10,298	10,843	11,383	11,989	2,586	1.0%	1%	1%
Fountaindale Industrial	66,856	68,205	70,462	72,996	75,349	78,118	11,262	0.6%	6%	4%
Gwandalan Industrial	4,756	5,148	5,539	5,923	6,297	6,678	1,921	1.4%	0%	0%
Long Jetty Industrial Area	4,459	4,761	5,058	5,350	5,640	5,940	1,481	1.2%	0%	0%
North Wyong Industrial	175,011	182,117	190,408	206,954	224,367	243,990	68,979	1.3%	15%	13%
Ourimbah Industrial	3,319	3,576	3,876	4,187	4,503	4,841	1,522	1.5%	0%	0%
Tuggerah Business Park	179,412	193,981	209,167	225,438	243,418	258,340	78,928	1.5%	16%	14%
Tuggerah Station Industrial	23,130	25,949	28,630	31,133	33,549	36,051	12,921	1.8%	2%	2%
Tuggerah Straight	142,624	154,874	167,971	180,839	193,423	206,906	64,282	1.5%	13%	11%
Tumbi Gardens Industrial	32,058	34,206	36,789	39,396	41,982	44,714	12,656	1.3%	3%	2%
WEZ Sparks Road North	13,430	31,908	45,325	56,615	67,803	75,414	61,984	7.1%	1%	4%
WEZ Wannervale Business Park	83,268	116,846	144,305	168,893	194,054	213,289	130,021	3.8%	7%	12%
Total	1,133,369	1,280,995	1,438,476	1,557,723	1,696,516	1,828,130	694,821	1.9%	100%	100%

Source: SGS Economics and Planning 2012, underlying growth based on BTS, 2009 augmented by SGS Economics and Planning in line with CCRS.

³⁹ BTS numbers are used here rather than audit numbers.

Table 14 shows the additional floorspace demand (between 2011 and 2036) by Broad Land Use Category for each precinct. For a given BLC, the green shaded cells correspond with the precinct projected to experience the greatest expansion in floorspace demand. This analysis identifies how land uses will shift over time. Overall, all land uses (BLC categories), except Urban Services, are projected to experience increased floor space demand.

In line with the CCRS adjusted BTS projection, Manufacturing Light (303,000 additional sqm), Freight and Logistics (163,600 additional sqm), Local Light (134,000 additional sqm), and Bulky Goods Retail (22,100 additional sqm) land uses are projected to experience significant increases in floorspace demand across the LGA. Demand for these land uses is mainly driven by projected employment in Manufacturing and Retail Trade sectors. Across the LGA, the CCRS adjusted BTS projections suggest that the former would generate 4036 additional jobs, while the latter will generate 5920 additional jobs over the next 25 years.

The majority of the Manufacturing Light demand is expected to be for floorspace in Bushells Ridge – Remainder (91,260 sqm), while the majority of the demand for Freight and Logistics uses is met in WEZ Warnervale Business Park (83,228 sqm) – though this could go more generally to other precincts in Bushells Ridge and WEZ respectively. In contrast, demand for Local Light land uses is spread over a few precincts. In particular, North Wyong Industrial is expected to require 23,492 additional square metres for Local Light uses. In addition, it is also projected to require 4800 additional square metres of floorspace for Bulky Goods Retail uses.

4.2 Gap analysis

The gap analysis is intended to provide an indication of whether there is a need for more industrial land or adjustments to current controls. Projected demand⁴⁰ for employment lands is compared against floorspace capacity under current controls to assess whether there is sufficient employment land supplied for future needs.

Table 15 shows demand⁴¹, supply and the gap (capacity less demand) in five, 10 and 25 year intervals. Note that all values are in square metres of floorspace.

Across the LGA, it is projected that there will be demand for approximately **695,000 square metres** of additional employment land floorspace by 2036. Since there is currently approximately 1.12 million square metres of additional floorspace capacity, there is sufficient supply across existing precincts in the LGA (spare capacity of around 425,000 sqm).

However, a precinct by precinct analysis reveals a different story. Based on the projections, consistent demand in Charmhaven and a lack of low-level constrained vacant land in Tumbi Gardens and Long Jetty result in supply shortages in these precincts in the next five years. By 2021, Berkeley Vale, Fountaindale, Long Jetty Industrial Area, Tuggerah Straight and WEZ Warnervale Business Park reach capacity. However, there is still significant capacity in other precincts.

By 2036, WEZ Airport Lands, WEZ North West - Warner Industrial Park, and WEZ Sparks Road North, North Wyong Industrial and Bushells Ridge Remainder have significant remaining spare capacity. Bateau Bay, Doyalson Industrial, Ourimbah Industrial, Tuggerah Business Park and Station Industrial are projected have less than a hectare of floorspace capacity. Given the projected demand in the Manufacturing and Retail Trade sectors, all other current precincts are projected to face floorspace shortages in 2036. Prior to 2036 then, there will be a need to rezone additional areas for industrial.

⁴⁰ Note that this is the policy adjusted version of the demand projections in line with the Central Coast Regional Strategy.

⁴¹ Forecasts are reported in-line with the NSW Metropolitan Strategy time-intervals.

TABLE 14. GROWTH IN FLOORSPACE DEMAND (SQM) BETWEEN 2011 AND 2036 IN PRECINCTS WITH EXISTING DEVELOPMENT

	BP	O	RM	RMG	RM	AST	D	S	LL	ML	MH	FL	US	Total additional floorspace
Berkeley Vale Industrial	884	0	0	0	1,846	0	596	449	16,423	73,019	0	23,472	327	117,016
Budweic Ridge	0	0	0	0	0	0	0	0	0	91,260	0	0	0	91,260
Cherubheen Industrial	4,288	0	0	3,629	0	3,471	0	0	20,111	3,026	0	3,481	-5	38,002
Doyalson Industrial	0	0	0	0	0	0	0	0	2,267	424	14	0	-119	2,586
Fouralrodle Industrial	0	0	0	216	0	0	0	0	4,538	5,807	0	581	0	11,202
Greenfield Industrial	0	0	0	0	0	0	0	0	1,921	0	0	0	0	1,911
Long Jetty Industrial Area	0	0	0	0	625	0	0	0	856	0	0	0	0	1,481
North Wyong Industrial	0	831	0	4,800	0	2,553	1,578	0	23,492	15,787	4,891	15,191	-144	68,979
Quarndah Industrial	0	0	0	182	0	340	0	0	517	283	0	0	0	1,512
Tuggerah Business Park	25,841	11,509	0	4,003	0	0	1,242	0	9,670	1,505	0	25,159	0	78,978
Tuggerah Station Industrial	0	0	0	1,322	1,709	0	0	0	7,119	526	0	191	-6	12,911
Tuggerah Strangle	4,975	526	0	5,168	3,564	0	0	0	30,336	9,251	0	10,443	19	64,282
Turrah Gardens Industrial	0	0	0	499	0	0	0	144	8,714	1,473	0	1,825	0	12,606
WTC Sports Road North	0	0	0	0	0	0	0	0	1,655	60,329	0	0	0	61,984
WTC International Business Park	0	0	0	0	0	0	0	0	6,443	40,350	0	83,228	0	130,011
TOTAL	35,987	12,867	0	22,119	7,804	0	6,959	3,413	134,061	303,042	4,905	163,571	72	694,811

Source: SGS Economics and Planning, 2012; Adjusted BTS, 2009 growth rates.



TABLE 15. GAP ANALYSIS (SQM OF FLOORSPACE) IN PRECINCTS WITH EXISTING DEVELOPMENT

Existing precincts	Capacity (vacant low-level constrained lots only)	2011 to 2016		2011 to 2021		2011 to 2036	
		Additional demand	Gap (Capacity - Demand)	Additional demand	Gap (Capacity - Demand)	Additional demand	Gap (Capacity - Demand)
Bateau Bay Industrial	887	0	887	0	887	0	887
Berkeley Vale Industrial	30,664	20,084	10,580	43,440	-12,776	117,016	-86,351
Bushells Ridge - remainder	132,320	27,439	104,880	47,175	85,145	91,260	41,060
Charmhaven Industrial	1,850	6,531	-4,681	14,452	-12,602	38,002	-36,151
Doyalson Industrial	8,561	385	8,176	895	7,666	2,586	5,974
Fountaindale Industrial	2,874	1,349	1,525	3,606	-733	11,262	-8,388
Gwandalan Industrial	1,095	391	703	782	312	1,921	-827
North Wyong Industrial	100,068	7,106	92,962	15,397	84,671	68,979	31,089
Long Jetty Industrial Area	0	302	-302	599	-599	1,481	-1,481
Ourimbah Industrial	6,150	256	5,894	556	5,594	1,522	4,628
Tuggerah Business Park	82,659	14,570	68,089	29,755	52,904	78,928	3,730
Tuggerah Station Industrial	19,667	2,818	16,848	5,499	14,167	12,921	6,746
Tuggerah Straight	14,303	12,249	2,053	25,346	-11,044	64,282	-49,979
Tumbi Gardens Industrial	383	2,148	-1,765	4,731	-4,348	12,656	-12,273
WEZ Airport Lands	111,346	0	111,346	0	111,346	0	111,346
WEZ North West - Warner Industrial Park	213,960	0	213,960	0	213,960	0	213,960
WEZ Sparks Road North	339,588	18,478	321,110	31,895	307,694	61,984	277,604
WEZ Warnervale Business Park	55,805	33,579	22,226	61,037	-5,233	130,021	-74,217
Total	1,122,178	147,686	974,492	285,167	837,011	694,821	427,357

Source: SGS Economics and Planning, 2012.

The following table shows the 25 year additional demand, capacity, and gap (capacity less demand) in terms of hectares of land. That is, the FSRs applied in the capacity calculation (Section 4.1) are used to convert floorspace capacity, and demand into equivalent hectares of land. This is a useful indicator of the overall land required and available over the next 25 years under the assumed FSRs. In contrast to the table above, Table 16 shows both existing and potential precincts.

Based on the projected demand growth patterns for the existing precincts, **193 hectares of land is required** over the next 25 years. To accommodate this additional demand, 391 hectares of land is available in existing precincts and 757 hectares of land in potential precincts is available. This implies a **net land capacity of 954 hectares at 2036**. Based on the projected demand growth over the next 25 years, 1148 hectares would be sufficient land for a further 123 additional years from 2036 onwards.

TABLE 16. GAP ANALYSIS (HA OF LAND) 2011 TO 2036: EXISTING AND POTENTIAL

Precinct name	25 year demand (additional) (Ha of land)	Capacity (Low-level constrained vacant lots) (Ha of land)	Gap (Ha of land)
Existing precincts			
Bateau Bay Industrial	0.00	0.48	0.5
Berkeley Vale Industrial	-33.24	8.71	-24.5
Bushells Ridge - remainder	-32.89	47.69	14.8
Charmhaven Industrial	-16.16	0.79	-15.4
Doyalson Industrial	-1.33	4.42	3.1
Fountaindale Industrial	-2.00	0.51	-1.5
Gwandalan Industrial	-1.75	0.99	-0.8
North Wyong Industrial	-21.15	30.69	9.5
Long Jetty industrial Area	-0.46	0.00	-0.5
Ourimbah Industrial	-1.09	4.41	3.3
Tuggerah Business Park	-10.93	11.44	0.5
Tuggerah Station Industrial	-7.68	11.70	4.0
Tuggerah Straight	-17.61	3.92	-13.7
Tumbi Gardens Industrial	-2.31	0.07	-2.2
WEZ Airport Lands	0.00	40.13	40.1
WEZ North West - Warner Industrial Park	0.00	77.11	77.1
WEZ Sparks Road North	-25.49	139.66	114.2
WEZ Warnervale Business Park	-19.31	8.29	-11.0
Total existing precincts	-193.40	391.0	197.6
Potential precincts			
Buttonderry WDF	0.00	21.00	21.00
Craigie Avenue	0.00	4.07	4.1
Darkinjung	0.00	30.97	31.0
Hunter Land	0.00	0.00	0.0
NWSSP Bushells Ridge North East	0.00	15.25	15.3
NWSSP Darkinjung South	0.00	43.37	43.4
NWSSP Doyalson East	0.00	33.12	33.1
NWSSP Doyalson North East	0.00	35.62	35.6
NWSSP Doyalson South West	0.00	53.34	53.3
NWSSP Doyalson West	0.00	31.62	31.6
NWSSP Hue Hue Road	0.00	38.25	38.3
NWSSP Lake Munmorah	0.00	109.33	109.3
NWSSP Warnervale North East	0.00	50.52	50.5
NWSSP Warnervale North West	0.00	71.29	71.3
NWSSP Warnervale South West	0.00	32.15	32.2
Wallerah No.2 Coal Site	0.00	186.60	186.6
Total potential precincts	0.00	756.56	756.56
Total current and potential precincts	-193.40	1,147.56	954.16

Source: SGS Economics and Planning, 2012.

4.3 Excess demand (shortage) allocation

Excess demand is understood as the demand in excess of the land supply in a precinct. In other words, excess demand is the floorspace shortage faced by a precinct. This sub-section allocates excess demand to current and potential precincts. This is conducted as a two stage process – a manual allocation of excess demand based on strategic considerations and an algorithm (using the precinct ranking) based excess demand allocation.

Assuming that the excess demand in each precinct has the same BLC profile of total additional demand in that precinct, Table 17 shows projected excess demand at 2036 by precinct and by BLC. The highlighted cells refer to the top two precincts that drive the excess demand for a given BLC. The majority of excess demand within the LGA is for Manufacturing Light (92,700 sqm), and Local Light (72,000 sqm) industrial uses. The majority of the Manufacturing Light excess demand comes from Berkeley Vale Industrial and WEZ Warnervale Business Park. The majority of Local Light shortages are driven by Charmhaven (19,100 sqm) and Tuggerah Straight (23,600 sqm). Of the 72,000 square metres of excess demand for this BLC, nearly 24,000 is 'spill-over' from Tuggerah Straight.

TABLE 17. EXCESS DEMAND AT 2036, BY BLC FOR EXISTING PRECINCTS (FLOORSPACE SQM)

Existing precinct	BP	O	RB	RBG	RM	AST	D	S	LL	ML	MH	FL	US	Total shortage
Bureau Bay Industrial	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Berkeley Vale Industrial	-652	0	0	0	-1,362	0	-440	-332	-12,119	-53,884	0	-17,321	-241	-86,351
Bushells Ridge - remainder	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bushells Ridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Charnahaven Industrial	-4,079	0	0	-3,452	0	0	-3,302	0	-19,132	-2,878	0	-3,312	0	-36,156
Doyalson Industrial	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fourfardale Industrial	0	0	0	-250	0	0	0	0	-3,380	-4,326	0	-433	0	-8,388
Gwardulion Industrial	0	0	0	0	0	0	0	0	-827	0	0	0	0	-827
North Wyong Industrial	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long Jetty Industrial Area	0	0	0	0	-625	0	0	0	-856	0	0	0	0	-1,481
Ourimbah Industrial	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tuggerah Business Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tuggerah Station Industrial	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tuggerah Straight	-3,868	-409	0	-4,018	-2,771	0	0	0	-23,586	-7,193	0	-8,119	-14	-49,979
Turnb Gardens Industrial	0	0	0	-484	0	0	0	-140	-8,451	-1,429	0	-1,770	0	-12,273
WEZ Airport Lands	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEZ North West - Warner Industrial Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEZ Sparks Road North	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEZ Warnervale Business Park	0	0	0	0	0	0	0	0	-3,678	-23,032	0	-47,507	0	-74,217
TOTAL	-8,599	-409	0	-8,205	-4,758	0	-3,742	-471	-72,028	-92,742	0	-78,462	-256	-269,672

Source: SGS Economics and Planning, 2012.



Stage 1: Manual allocation of excess demand

Even though there is still a significant amount of theoretical spare capacity in three of the four precincts located in WEZ, some of the excess demand may not locate in those precincts. From a strategic point of view, issues such as fragmented ownership would be an obstacle, or for instance, the precincts with spare floorspace capacity may not be suitable for the uses desired by the market. The algorithm based demand allocation attempts to simulate the behaviour of the market. In contrast, the manual allocation of excess demand captures strategic planning considerations (consistent with simulating good planning outcomes) which cannot be captured by the precinct rank algorithm.

For such reasons, excess demand is manually allocated to three precincts (one current, and two potential precincts) based on their strategic location and future character. The following table details the allocation. In summary, all excess demand for Office (409 sqm), Dispersed (3742 sqm), and Special (471 sqm) uses has been allocated to NWSSP Warnervale South West. All 72,028 square metres of excess demand for Local Light uses has been allocated to WEZ Sparks Road North (20,000 sqm) (though it could go elsewhere in the WEZ), NWSSP Bushells Ridge North East (37,500 sqm), and NWSSP Warnervale South West (20,500 sqm). In summary, **76,650 square metres** of the 263,046 square metres of excess demand has been allocated 'manually' in Stage 1.

TABLE 18. MANUAL ALLOCATION TO NEW PRECINCTS

Precincts	Excess demand allocated (sqm)	Allocated demand type (BLC)	Comments
WEZ Sparks Road North	14,706	LL	This precinct could contain a mix of lot sizes including some small lots suitable for local light industry uses (as well as large lots for freight and logistics). This precinct is located in proximity to the future Wye residential precinct. Local light industry uses to service the future local population of Wye could locate in this precinct.
NWSSP Bushells Ridge North East	42,323	LL	409 sqm of Office, 3,742 sqm of Dispersed, 471 sqm of Special, and 15,000 sqm of Local Light uses are allocated to this precinct. Given that this precinct contains Council owned land, it is suitable for early structure planning and to accommodate early demand from the future Warnervale residential precinct.
NWSSP Warnervale South West	19,622	⊙ = D + S + LL	
Total	76,650		

Source: SGS Economics and Planning, 2012.

Further discussion regarding the strategic planning implications of this allocation is discussed in Section 5.

Stage 2: Rank based allocation of excess demand

Given that there are future capacity shortages in 11 of the 18 existing precincts, it is likely that non-price market signals (such as cluster crowding) and relative price differentials will push the excess demand to other existing precincts within the LGA. Precincts with excess supply are likely to be relatively cheaper at the margin and can be expected to attract demand squeezed out of other precincts provided they are suitable substitutes.

In an attempt to simulate a re-distribution of precinct-specific excess demand by the market, total excess demand is allocated using an algorithm that uses two key ranking components: an inter-precinct constraint ranking and a within-precinct BLC suitability ranking. The combination of these two components acts as a proxy to assess precinct substitutability for different land uses. The inter-precinct constraint ranking utilises both environmental and infrastructure constraints. The within-precinct suitable land-use (BLCs) ranking is based on strategic planning considerations of land-use suitability. See for the complete inter-precinct constraint rankings and within-precinct BLC rankings.

The main steps in the excess demand allocation algorithm are described below.

- Only precincts with excess capacity (after the Stage 1 manual allocation) are considered.
- Precincts with a higher overall constraint ranking (less constrained along environmental and infrastructure dimensions; compared to others with excess supply) are allocated excess demand first. However, only excess demand relating to the first ranked BLC is allocated in the first round.
- This process continues from high to low constraint ranking and high to low BLC ranking⁴².

Broadly speaking, this algorithm simulates the scenario where excess demand for a particular land use (as defined by BLC) will be attracted to a less constrained precinct where the market believes that the precinct is highly suitable for such a land use. However, note that this process is not designed to explicitly simulate the market dynamics of resource allocation. It is simply a theoretical exercise to understand what may occur assuming that precincts are highly substitutable.

Following the Stage 1 manual allocation, there remains around 193,000 square metres of excess demand to be allocated. Stage 2 allocates the remaining excess demand along two dimensions: the inter-precinct ranking (overall environmental and infrastructure constraint score) and the within-precinct BLC ranking (strategic land-use suitability). Table 19 shows a breakdown of the excess demand to be allocated in Stage 2.

TABLE 19. EXCESS DEMAND TO BE ALLOCATED (FLOORSPACE SQM)

	Before Stage 1	After Stage 1
Business Park	-8,599	-8,599
Office	-409	0
Retail Big Box	0	0
Retail Bulky Goods	-8,205	-8,205
Retail Mainstreet	-4,758	-4,758
Accommodation (Short-Term)	0	0
Dispersed Activities	-3,742	0
Special Activities	-471	0
Local Light	-72,028	0
Manufacturing Light	-92,742	-92,742
Manufacturing Heavy	0	0
Freight and Logistics	-78,462	-78,462
Urban Services	-256	-256
Total	-269,672	-193,022

Source: SGS Economics and Planning, 2012.

Table 20 shows the excess demand 'absorbed' by other precincts with excess supply. Of the 21 precincts with capacity, 16 are potential future precincts and 5 are existing precincts. Of these 21 precincts with capacity, the higher ranked precincts are allocated excess demand first. The algorithm allocates excess demand for Business Parks to Tuggerah Business Park (3730 sqm), and NWSSP Warnervale South West (4869 sqm). All of the Retail Bulky Goods excess demand (a modest 8,205 sqm) gets absorbed by NWSSP Warnervale North East. The second highest land use in excess demand – Manufacturing Light, get allocated to three precincts: NWSSP Doyalson North East (42,719 sqm), North Wyong Industrial (31,089 sqm), and Tuggerah Station Industrial (6745 sqm). The highest land-use in excess demand – Freight and Logistics (78,462 sqm); gets wholly allocated to WEZ Airport Lands. Excess demand for Urban Services gets allocated to NWSSP Warnervale South West (256 sqm).

Only excess demand for Retail Main-street uses (4758 sqm) could not be allocated in Stage 2. This is because no precinct has this land use in its top-four suitable land-uses. It is therefore expected that the excess demand for Retail Main-street would locate in the larger centres. The modelling suggests that the market requires floorspace for this land use. It is therefore important that Council's centres policy accommodates the projected need for this land use.

⁴² Note that the BLC ranking by precinct is only for four land uses. This is because the market is likely to be indifferent between precincts for lower ranked BLCs.

TABLE 20. ALLOCATION OF EXCESS DEMAND TO CURRENT AND POTENTIAL PRECINCTS (FLOORSPACE SQM) – RANK ALGORITHM

Precinct name	Precinct rank	Net capacity	Precinct Type	Amount of excess demand allocated by BLC rank								Final net capacity		
				Allocated Excess demand	1st ranked BLC	Allocated Excess demand	2nd ranked BLC	Allocated Excess demand	3rd ranked BLC	Allocated Excess demand	4th ranked BLC			
Tuggerah Business Park	1	3,730	Existing	3,730	BP	0	O	0	LL	0	0	0	FL	0
Craigie Avenue	8	11,301	Potential	0	LL	11,301	ML	0	FL	0	0	0	US	0
North Wyong Industrial	9	31,089	Existing	0	LL	31,089	ML	0	FL	0	0	0	MH	0
Ourimbah Industrial	11	4,628	Existing	0	LL	0	FL	0	ML	0	0	0	US	4,628
Bureau Bay Industrial	13	887	Existing	886	ML	0	LL	0	FL	0	0	0	MH	0
Doyleson Industrial	14	5,974	Existing	0	LL	0	FL	0	ML	0	0	0	-	5,974
Tuggerah Station Industrial	15	6,745	Existing	0	LL	6,745	ML	0	US	0	0	0	MH	0
NWSSP Doyleson East	16	91,882	Potential	0	LL	0	FL	0	ML	0	0	0	-	91,882
WEZ Airport Lands	17	111,346	Existing	78,462	FL	0	MH	0	ML	0	0	0	US	32,884
NWSSP Warnervale North East	18	140,167	Potential	0	LL	0	FL	8,205	RBG	0	0	0	ML	131,962
NWSSP Doyleson West	19	87,736	Potential	0	LL	0	BP	0	ML	256	0	0	ML	87,736
NWSSP Warnervale South West	20	69,598	Potential	0	LL	4,869	FL	0	US	0	0	0	ML	64,474
NWSSP Doyleson North East	21	65,887	Potential	0	FL	42,719	ML	0	MH	0	0	0	US	23,168
Darlinglung South	22	120,326	Potential	0	FL	0	MH	0	ML	0	0	0	US	120,326
NWSSP Doyleson South West	23	148,016	Potential	0	MH	0	ML	0	US	0	0	0	-	148,016
NWSSP Lake Munmorah	24	303,348	Potential	0	FL	0	ML	0	MH	0	0	0	US	303,348
NWSSP Lake Munmorah	25	106,145	Potential	0	FL	0	MH	0	ML	0	0	0	US	106,145
NWSSP Hue Hue Road	26	41,060	Existing	0	FL	0	MH	0	ML	0	0	0	US	41,060
Bushells Ridge - remainder	28	197,824	Potential	0	LL	0	ML	0	US	0	0	0	FL	197,824
NWSSP Warnervale North West	29	517,769	Potential	0	FL	0	ML	0	MH	0	0	0	US	517,769
Waterah No. 2 Coal Site	30	85,930	Potential	0	FL	0	MH	0	ML	0	0	0	US	85,930
Darlinglung														
WEZ North West - Warner														
Industrial Park	32	213,960	Existing	0	FL	0	MH	0	ML	0	0	0	US	213,960
Balderny WDF	33	58,269	Potential	0	FL	0	MH	0	ML	0	0	0	US	58,269
WEZ Sparks Road North	34	262,879	Existing	0	LL	0	FL	0	MH	0	0	0	ML	262,879

Source: SGS Economics and Planning, 2012.



Summary of excess demand allocation

In summary, the demand modelling suggests that there would be around **269,700 square metres of excess demand** in existing precincts. This excess demand is allocated in a two-stage process. Firstly, based on strategic planning considerations and secondly, based on a ranking of precincts it is allocated to existing precincts and new precincts. In the first stage manual allocation, 76,650 square metres is allocated to three precincts, and in the second stage rank-algorithm allocation 188,263 square metres gets allocated to seven precincts. The remaining excess demand of 4,758 square metres for Retail Main-street uses does not get allocated in either Stage 1 or 2 (it is assumed that it goes to centres).

Table 21 summarises the allocation and shows the remaining supply in each existing precinct. The WEZ Airport Lands precinct absorbs the most excess demand (78,462 sqm of FL), followed by NWSSP Doyalson North East (42,719 sqm of mainly ML) and NWSSP Bushells Ridge North East (42,323 sqm of LL). The modelling shows that existing precincts (with spare capacity) absorb 135,619 square metres of excess demand (mainly FL and LL) while potential precincts capture 129,295 square metres (mainly ML and LL) of spill over from existing precincts at capacity. This implies that current precincts have 561,406 square metres of remaining capacity (mainly in WEZ North West, and Sparks Road North) while potential precincts have almost 1.9 million square metres of remaining capacity. Overall, including the potential or planned precincts, the LGA is projected to have **2.5 million square metres of capacity** by 2036.

TABLE 21. SUMMARY OF EXCESS DEMAND ALLOCATION (STAGES 1 AND 2), (FLOORSPACE SQM)

Predict	Spare capacity at 2036	BP	O	RB	RBG	RM	AST	D	S	LL	ML	MH	FL	US	Total		
															excess demand allocated	Final capacity at 2036	
Existing precincts																	
Bureau Bay Industrial	887	0	0	0	0	0	0	0	0	0	887	0	0	0	0	887	0
Bushells Ridge - remainder	41,060	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41,060	0
Doyolson Industrial	5,974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,974	0
North Wyong Industrial	31,089	0	0	0	0	0	0	0	0	0	31,089	0	0	0	0	31,089	0
Ourimbah Industrial	4,628	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,628	0
Tuggerah Business Park	3,730	3,730	0	0	0	0	0	0	0	0	0	0	0	0	0	3,730	0
Tuggerah Station Industrial	6,746	0	0	0	0	0	0	0	0	0	6,746	0	0	0	0	6,746	0
WEZ Airport Lands	111,346	0	0	0	0	0	0	0	0	0	0	0	78,462	0	0	32,884	0
WEZ North West - Warner Industrial Park	213,960	0	0	0	0	0	0	0	0	0	0	0	0	0	0	213,960	0
WEZ Sparks Road North	277,604	0	0	0	0	0	0	0	0	14,706	0	0	0	0	0	14,706	262,898
Potential precincts																	
Buttenderry WDF	58,269	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58,269	0
Craigie Avenue	11,301	0	0	0	0	0	0	0	0	0	11,301	0	0	0	0	11,301	0
Darlington	85,930	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85,930	0
NWSSP Bushells Ridge North East	42,323	0	0	0	0	0	0	0	0	42,323	0	0	0	0	0	42,323	0
NWSSP Darlington South	120,326	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120,326	0
NWSSP Doyolson East	91,892	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91,892	0
NWSSP Doyolson North East	65,887	0	0	0	0	0	0	0	0	0	42,719	0	0	0	0	42,719	0
NWSSP Doyolson South West	148,016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	148,016	0
NWSSP Doyolson West	87,736	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87,736	0
NWSSP Haze Haze Road	106,145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	106,145	0
NWSSP Lake Muneranzh	303,368	0	0	0	0	0	0	0	0	0	0	0	0	0	0	303,368	0
NWSSP Warnervale North East	140,167	0	0	0	8,205	0	0	0	0	0	0	0	0	0	0	8,205	0
NWSSP Warnervale North West	197,824	0	0	0	0	0	0	0	0	0	0	0	0	0	0	197,824	0
NWSSP Warnervale South West	89,221	4,869	409	0	0	0	0	3,742	471	15,000	0	0	0	256	0	24,747	64,474
Walbrath No. 2 Coal Site	517,769	0	0	0	0	0	0	0	0	0	0	0	0	0	0	517,769	0
Total	2,753,199	8,599	409	0	8,205	0	0	3,742	471	72,028	92,742	0	78,462	256	0	264,914	2,488,285

Source: SGS Economics and Planning, 2012.



4.4 Sensitivity testing

To test the sensitivity of the gap analysis findings, scenario testing was undertaken by introducing exogenous shocks to three land-use categories (and thereby, employment in respective industries). In other words, the impact of increased employment in targeted industries due to factors outside the control of Wyong Shire Council is tested. The following table shows the impacted BLC categories, the magnitude of the impacts and the rationale behind the choice of land-use. Note that this process incorporates information from consultation and the LQ growth share analysis.

TABLE 22. SENSITIVITY TESTING: EXOGENOUS SHOCKS

BLC	Size of increase by 2036	Rationale
Freight and logistics (FL)	30% increase in all precincts	If there are significant improvements to connectivity and road infrastructure, the strategic positioning and suitability of some precincts may attract greater floorspace demand in this BLC.
Business Park (BP)	20% increase in all precincts	Expansion of the NBN and technological services related to high speed broadband is likely to create greater demand for business park floorspace. Given the lower density of employment in these industries, a 20 percent increase in floorspace is tested.
Light Manufacturing (ML)	20% increase in all precincts	Consultation suggest that high tech, higher order industry should be targeted to provide employment for local skilled workforce and enable higher order 'cleaner' enterprise development. Such employment would be captured by light Manufacturing. A 20 percent increase in floorspace is assumed.

Source: SGS Economics and Planning, 2012.

The exogenous demand shocks are imposed on the projected floorspace demand at 2036, across all precincts which have the relevant BLC. For instance, baseline projected Business Park floorspace in Berkeley Vale Industrial in 2036 is 2364 square metres (an increase of 59 percent from 2011). By introducing a 20 percent exogenous shock, 2036 floorspace in the precinct increased to 2836 square metres (an increase of 91 percent⁴¹ from 2011).

As before, the new additional floorspace demand is compared to (unchanged) floorspace capacity by precinct. Table 23 shows the gap at 2036 only.

Under the base case (prior to allocation) WEZ Airport Lands, WEZ North West - Warner Industrial Park, WEZ Sparks Road North had significant spare capacity. While Bushells Ridge – Remainder, Ourimbah Industrial, and Tuggerah Business Park had some capacity. Under the higher floorspace demand scenario the three WEZ precincts continue to have the most capacity. However, the capacity in Bushells Ridge – remainder, and North Wyong Industrial is greatly reduced under this scenario.

Overall, total demand under this scenario is 985,970 square metres. As a result, there is a shortage of 487,467 square metres in nine precincts in the LGA. This simulation suggests that, in the event that macroeconomic exogenous shocks to Freight and Logistics, Business Park, and Light Manufacturing become a reality, of the current precincts only three precincts in WEZ would have any significant spare capacity to accommodate excess demand from other precincts.

⁴¹ Note that the percentage growth in floorspace demand for a given BLC would increase by the same amount ($1.59^{*}1.2=1.91$). Given that the increases are simply the product of the exogenous shocks the base line (policy adjusted) figures reported earlier, floorspace by precinct by BLC is not reported again for the sake of brevity.

TABLE 23. GAP ANALYSIS – SENSITIVITY TESTING (FLOORSPACE SQM)

Existing precincts	Capacity (vacant Low-level constrained lots only)	2011 to 2036	
		Additional demand	Gap (Capacity - Demand)
Bateau Bay Industrial	887	0	887
Berkeley Vale Industrial	30,664	188,901	-158,237
Bushells Ridge - remainder	132,320	113,934	18,386
Charmhaven Industrial	1,850	51,451	-49,601
Doyalson Industrial	8,561	3,152	5,409
Fountaindale Industrial	2,874	22,095	-19,221
Gawdalan Industrial	1,095	1,921	-827
North Wyong Industrial	100,068	99,699	369
Long Jetty Industrial Area	0	1,481	-1,481
Ourimbah Industrial	6,150	1,764	4,386
Tuggerah Business Park	82,659	123,017	-40,359
Tuggerah Station Industrial	19,667	13,690	5,977
Tuggerah Straight	14,303	87,554	-73,251
Tumbi Gardens Industrial	383	15,960	-15,577
WEZ Airport Lands	111,346	0	111,346
WEZ North West - Warner Industrial Park	213,960	0	213,960
WEZ Sparks Road North	339,588	76,634	262,955
WEZ Warnervale Business Park	55,805	184,718	-128,913
Total	1,122,178	985,970	136,208

Source: SGS Economics and Planning, 2012.

Even with exogenous (upward) shocks to floorspace demand in three BLCs, there is still sufficient overall supply at an LGA level. However, at a precinct level, nine out of 14 precincts face supply shortages compared to the 8 in the base case. The difference being that the increased demand for Business Park and Freight and Logistics leads to a shortage of floorspace in Tuggerah Station Industrial by 2036. Overall, excess demand by 2036 is 217,799 square metres higher than the base line due to the three shocks introduced to the model.

As before, the excess demand is subject to the two-stage demand allocation process. The manual allocations are identical in their location to the base case. However, the only difference being that the magnitude of the first-stage manual allocation is higher. In total, 482,318 square metres of excess demand is allocated to existing precincts and potential precincts. Table 24 summarises the allocation and shows the remaining supply in each existing precinct.

In the first stage manual allocation, 89,315 square metres is allocated to three precincts (same precincts as the base case), and in the second stage rank-algorithm allocation 393,002 square metres gets allocated to 10 existing and potential precincts. As before, the remaining excess demand of 5,153 square metres for Retail Main-street uses does not get allocated in either Stage 1 or 2. Excess demand for this land use is higher than the base case because there are more precincts with severe shortages under this scenario. In summary, the demand modelling suggests that there would be around 142,000 square metres of excess demand allocated to existing precincts, and around 129,000 square metres allocated to potential precincts.

Overall, NWSSP Doyalson South West precinct absorbs the most excess demand (148,000 of ML), followed by WEZ Airport Lands (111,000 sqm of FL), and NWSSP Doyalson North East (mainly 63,000sqm of FL). Subsequent to the excess demand allocation process, current precincts have 482,088 square metres of remaining capacity (mainly in WEZ Sparks Road North, and WEZ North West) while potential precincts have 1,725,443square metres of remaining capacity. Overall, under this simulation, the LGA is projected to have **2.2 million square metres of capacity** by 2036.

This simulation highlights that existing precincts **could** face shortages under certain conditions; such as those described by the exogenous shocks. It demonstrates that existing precincts may not be able to accommodate future demand and lower ranked potential precincts (such as NWSSP Lake Munmorah) may be required to accommodate future demand. Council needs to monitor demand, and manage the zoning and servicing of its stock of employment land to accommodate possible changes to the local economy which lead to increased demand for land.

TABLE 24. SUMMARY OF EXCESS DEMAND ALLOCATION (STAGES 1 AND 2) – SENSITIVITY TESTING (FLOORSPACE SQM)

Project name	Starting capacity at 2036	BP	O	RB	RBG	RM	AST	D	S	LL	ML	MH	FL	US	Total excess demand allocated	Final capacity at 2036
Existing projects																
Berkeley Bay Industrial	887	0	0	0	0	0	0	0	0	0	887	0	0	0	887	0
Berkeley Vale Industrial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bathurst Ridge - remastered	18,386	0	0	0	0	0	0	0	0	0	0	0	0	0	18,386	0
Charrahuen Industrial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Doylabon Industrial	5,409	0	0	0	0	0	0	0	0	0	0	0	0	0	5,409	0
Fouralinda Industrial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Greenfield Industrial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Wyong Industrial	369	0	0	0	0	0	0	0	0	0	369	0	0	369	0	0
Long Jetty Industrial Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quemah Industrial	4,386	0	0	0	0	0	0	0	0	0	0	0	0	0	4,386	0
Tuggerah Business Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tuggerah Station Industrial	5,977	0	0	0	0	0	0	0	0	0	5,977	0	0	5,977	0	0
Tuggerah Straight	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tandah Gardens Industrial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WTC Airport Land	111,346	0	0	0	0	0	0	0	0	0	0	0	111,346	0	111,346	0
WTC North West	213,960	0	0	0	0	0	0	0	0	0	0	0	0	0	213,960	0
WTC Sports Road North	262,955	0	0	0	0	0	0	0	0	23,007	0	0	0	23,007	239,948	0
WTC Wannanah Business Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Potential projects																
Kaaterberry WSP	58,269	0	0	0	0	0	0	0	0	0	0	0	0	0	58,269	0
Cringle Avenue	11,301	0	0	0	0	0	0	0	0	0	11,301	0	0	0	11,301	0
Darbylung	85,930	0	0	0	0	0	0	0	0	0	0	0	0	0	85,930	0
Hunter Land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MWSSP Bookah Ridge North East	42,323	0	0	0	0	0	0	0	0	42,323	0	0	0	0	42,323	0
MWSSP Darbylung South	120,326	0	0	0	0	0	0	0	0	0	0	0	0	0	120,326	0
MWSSP Doylabon East	91,892	0	0	0	0	0	0	0	0	0	0	0	0	0	91,892	0
MWSSP Doylabon North East	65,887	0	0	0	0	0	0	0	0	0	3,190	0	62,697	0	65,887	0
MWSSP Doylabon South West	148,016	0	0	0	0	0	0	0	0	0	148,016	0	0	148,016	0	0
MWSSP Doylabon West	87,736	0	0	0	0	0	0	0	0	0	0	0	0	0	87,736	0
MWSSP Hays Hill Road	106,145	0	0	0	0	0	0	0	0	0	0	0	0	0	106,145	0
MWSSP Lake Huronarah	303,368	0	0	0	0	0	0	0	0	0	9,420	0	293,948	0	303,368	0
MWSSP Watererale North East	140,167	0	0	0	0	0	0	0	0	0	0	0	0	0	140,167	0
MWSSP Watererale North West	197,824	0	0	0	0	0	0	0	0	0	0	0	0	0	197,824	0
MWSSP Watererale South West	89,221	29,594	0	0	0	0	0	0	0	0	0	0	0	289	53,869	0
Wyaharra No 2 Coal Site	517,769	0	0	0	0	0	0	0	0	0	0	0	0	0	517,769	0
Total	3,889,849	29,594	0	0	0	0	0	0	0	0	3,845	0	174,043	289	482,318	2,207,551

Source: SGS Economics and Planning, 2012.



4.5 Key findings

Using the industrial land audit data and broad constraints analysis on the supply side, the state government's employment projections (adjusted to account for the CCRS employment targets) and a variety of assumptions on the demand side this section proposes the following key findings in relation to supply and demand for employment lands in the LGA.

- Of the total 520 hectares of vacant land in current precincts, 75 percent or about 391 hectares was environmentally low-level constrained and available for development. Of the total 1026 hectares of potential industrial land (vacant), 74 percent or 757 hectares was low-level constrained. In summary, there is a total of 1547 hectares of vacant land and 1148 hectares of low-level constrained vacant land in the LGA.
- As a whole, there is a total of 250 hectares of serviced, low-level constrained in the Wyong LGA; representing around 16 percent of land in both existing and potential precincts. Importantly, only 127 hectares of this is currently zoned industrial and ready for development.
- Using the CCRS employment targets (converted to an annual figure) the Wyong Shire is expected to accommodate 27,000 new jobs between 2011 and 2036.
- Across the LGA, it is projected that there will be demand for approximately 695,000 square metres of additional employment floorspace (or 193 hectares) by 2036. Since there is currently approximately 1.12 million square metres of additional floorspace supply available in existing precincts (on vacant low-level constrained lots), there is sufficient notional current supply across the LGA.
- However, the analysis shows that some precincts will 'fill' in the 2036 year period, meaning others will accommodate 'overflow'. Some of the overflow will be accommodated by existing precincts but because they will not all be suited to the overflow demand (not within the local area or not having the physical characteristics) new and more suitable precincts will need to be 'turned on' in about 10 years or so (subject to review). The modelling suggests that in the order of 130,000 square metres of floorspace will need to be accommodated in 'new' precincts in due course.
- 'Sensitivity' testing of the results by increasing demand in three key industry sectors (freight and logistics, business park activities, and light manufacturing land uses), suggests that under this scenario some new precincts will have to be 'turned on' sooner, with the existing capacity in the LGA exhausted by 2036.
- Overall though, based on the base case demand trends (193 hectares of demand) modelled in this report (and conservative supply assumptions) there is in the order of 123 years supply of industrial land (954 hectares) remaining in both existing and future precincts by 2036. The 193 hectares of demand over the next 25 years equates to approximately 7.7 hectares pro rata of industrial land take-up per annum.
- Using the 7.7 hectares as the pro rata demand figure, and comparing Wyong LGA's employment lands supply to the NSW Employment Lands Taskforce best-practice benchmark, there is sufficient supply in the LGA:

Category of land	Best practice supply (years)	Wyong LGA's supply (years)	Wyong LGA's supply (Ha)
Undeveloped: zoned and serviced	5-7 years	16 years	126.5
Undeveloped: unzoned and serviced	n.a.	16 years	123.3
Undeveloped: zoned but not serviced	8-10 years	34 years	264.5
Strategically identified ⁴⁴	15 years	98 years	756.5

Source: NSW DP&I, 2012.

It should be remembered however that only a share (in the order of a quarter to a third) of future jobs are likely to be in broad hectare employment lands. Population growth – when it picks up again in Wyong Shire – will stimulate jobs in a number of sectors including health, retailing and education which are not typically located in 'industrial' areas. Service industry jobs associated with population growth will locate in light industry areas.

⁴⁴ Includes only low-level constrained potential land

In addition, the current apparent flat industrial market is an Australia wide phenomenon in outer suburban and regional areas in particular. During up-turns the employment growth rate will accelerate and this will be when the self containment rate improves. A share of this employment will be in the employment lands considered in this report though as many or more will be in centres and dispersed.

Notwithstanding market cycles, more can be done to encourage and facilitate employment growth in the Shire, though simply re-zoning additional land for employment, or adopting a laissez-faire approach to use provisions is not appropriate. A more strategic approach involving infrastructure initiatives, education and skills development and targeted business assistance is necessary.

The other lesson from the analysis is that proposals for new employment areas should always be tempered by realism in terms of future take up possibilities and infrastructure and servicing costs. A sequenced and coordinated approach to employment land release ultimately represents the most efficient and cost sensible way to manage supply responses to demand.

5 WYONG'S EMPLOYMENT LANDS FUTURE

Five strategic themes have been identified to address the needs identified in the study brief. Proposals to address the themes and needs are included under each strategic theme.

A sixth overarching strategic theme is related to implementation and is about delivering each of the proposals via specific actions in existing and proposed development areas.⁴⁵

5.1 Strategic theme 1: Protecting the employment role of centres while also encouraging employment growth in the Shire by allowing new employment land activities

At the heart of this strategic theme is the tension between a centres based approach to planning and a more laissez faire approach.

- A centres based approach to planning seeks to concentrate higher order employment related activity in particular to realise the strategic benefits of clustering and trip minimisation, with some restrictions on out of centre commercial and retail development.
- On the other hand, a more laissez faire approach would allow new forms of enterprise and commercial development in industrial areas, often taking advantage on lower land values, to encourage employment growth.

The centres based approach to planning is crucial to future sustainability. The changing needs of industry, including a higher office component in many developments, also need to be recognised. This was a strong theme of consultation with industry – the need for planning controls to provide flexibility for new technology and industry spaces. Planning needs to effectively balance these competing pressures to achieve multiple objectives, including for sustainability, social cohesion and economic development.

Wyong-Tuggerah should be developed as a single centre with a complex of spaces

Significant opportunities exist to expand business park opportunities in Wyong, due to the growing knowledge-base of the economy and professionalisation of the workforce. Successful business parks need to be carefully planned, with clear directives regarding building design, amenity and complementary business uses that support the growth of these new economic spaces. Wyong-Tuggerah major centre actually brings together the elements of a traditional centre and new retail centre, with bulky goods opportunities and the Tuggerah Business Park.

Wyong-Tuggerah is one of the fastest growing centres in the Greater Metropolitan Region. Using 2006 Travel Zone definitions, Wyong-Tuggerah grew from 7500 jobs in 2001 to 10,600 jobs in 2006 (i.e. 3100 jobs). The only other major centre that grew faster was Campbelltown, which generated 3800 additional jobs over the same period. In fact, Wyong-Tuggerah out-performed the Sydney regional cities of Penrith (plus 1300 jobs) and Liverpool (plus 900 jobs). Importantly, over this period, the Central Coast regional city, Gosford, actually experienced a decline of employment from 13,200 jobs in 2001 to 13,100 jobs in 2006. If Wyong can successfully integrate the complementary centre and business park land uses over time, it is likely to evolve as the dominant centre of the

⁴⁵ Detailed recommendations in relation to individual industrial or employment land precincts are included in this section and Appendix 2. No precincts are recommended for conversion from employment uses, though a few are recommended for intensification. Justification for this intensification is provided below and in Appendix 2 and this draws on the attributes listed in the principles and attributes outlined in the Stakeholder Consultation Paper – Implementing the Metropolitan Plan – Planning Principles for Industrial Lands.

Central Coast. For Tuggerah Business Park this will require addressing some of the long term constraints on growth, and ensuring that quality office space is integrated with advanced industrial activities in ways that support and complement the centre rather than competing with it.

In the Wyong Shire past development decisions which have allowed the Tuggerah Westfield shopping centre, Tuggerah Business Park and Tuggerah Straight to develop with retail and commercial activities, have undermined the retail and commercial prospects for the Wyong town centre in particular. There is a range of employment activities in the different precincts in this Wyong-Tuggerah area. The Wyong Town Centre alone is never going to be able to revive as the dominant commercial and retail employment hub in the Shire.

This has been recognised in the Metropolitan Strategy and Central Coast Regional Strategy by defining the Major Centre as Wyong-Tuggerah together. The CCRS suggests:

Tuggerah–Wyong will become a Major Centre with the main shopping, civic and business focus for Wyong Shire. The close proximity and complementary roles of Tuggerah and Wyong will be built on and planned in a coordinated fashion. Wyong, Tuggerah Straight, Anzac Road, Tuggerah Business Park, Westfield Tuggerah, Tuggerah Super Centre, Westfield's Tuggerah Gateway site and the Tuggerah Lake Reserve will play key roles for the overall centre⁴⁶.

Given the categorisation as a Major Centre and its complex character there is a case for considering a wider view of Wyong-Tuggerah and undertaking a more detailed study of its elements. If seen as a single centre, as advocated in the strategy plans, the opportunity exists to facilitate and encourage additional employment growth, by expanding the areas for more intensive development, while redefining the role of other parts of the centre to create a complex of spaces.

The following guidance was provided by the CCRS. The directions that have been expressed through Council's strategy will inform future planning and include plans to:

- revitalise Wyong centre
- investigate higher density housing
- improve transport links
- upgrade the Westfield shopping centre at Tuggerah
- develop the area between Westfield shopping centre and Tuggerah station
- develop the site between Westfield shopping centre and the F3 Freeway
- investigate development at Tuggerah Straight
- investigate bus services improvements within the centre⁴⁷.

Specific additional elements consistent with and advancing this thinking include the following:

- All of Tuggerah Straight and west Bryant Drive should be 'opened up' as a more intense mixed enterprise and development area (with Business Development zoning).
- Bulky goods retail development in Tuggerah Straight would be restricted to the Pacific Highway frontage.
- Higher density mixed use development should be encouraged in Wyong Town Centre; it should be developed as a boutique residential and commercial environment, with live-work opportunities facilitated by the NBN.
- Major improvements in accessibility and movement within the precinct are required. This includes bicycle paths, internal bus routes and more pedestrian friendly environments and connections.
- Westfield should be encouraged or required to 'infill' with residential land open out with street frontage activation as much as possible.
- The council owned car park adjacent to Tuggerah station, could be added to the Tuggerah Station Precinct, and included in an integrated multi-story car park and commercial development in the future.
- A 'main street' node near Tuggerah station should be identified and developed.

These are only some of the elements that need to be included in a Wyong-Tuggerah structure planning exercise.

By considering Wyong-Tuggerah as a single centre and developing it in an integrated way the issue of whether a commercial development is in centre or out of centre does not arise.

⁴⁶ NSW DPI (2008), Central Coast Regional Strategy, p.17.

⁴⁷ *ibid*, p.18.

FIGURE 8. WYONG-TUGGERAH STRATEGIC EMPLOYMENT COMPLEX



Business park zones should be 'urban' in character with some restrictions on the nature of the office development and linked to centres

Significant changes are occurring in business parks. The traditional business park was a higher order land use which created a campus style environment easily accessible by car. One of the initial competitive advantages of business parks was in fact the capacity to establish them in land-abundant areas to provide ample parking and close to major road networks. In the NSW context, these economic spaces were considered out-of-centre and competitors for centres. This view has changed.

Major strategic plans such as the Sydney Metropolitan Strategy (2006) and Sydney Metropolitan Plan (2010), and associated regional plans, including the Central Coast Regional Strategy, emphasised the importance of locating business parks closer to public transport and articulating the complementary roles of centres and business parks. Further, significant changes in industrial structure, including greater out-sourcing and specialisation and growth of knowledge-based businesses, is resulting in changes in business park planning, with more emphasis on medium-sized enterprises, links with research, education and technology institutions. Additionally, changing social preferences towards living and working environments is bringing about changes in design and function of business parks, including more emphasis on public domain spaces, links to culture and hospitality and indeed, living environments within walking distance of workplaces. Wyong-Tuggerah is well suited to be developed as an integrated centre, bringing together retail and hospitality, community and business services, bulky goods and business park opportunities in a highly accessible centre.

Leyshon consulting provided advice which suggested that office developments in business zone areas should be a minimum of 200-500 square metres. Wyong Shire DCP 2005 - Chapter 80 - Tuggerah Precinct currently requires certain businesses and commercial offices not associated with manufacturing, processing, storage or distribution functions within this business park to have a gross floor area greater than 200 square metres. This approach is a supportable position.

In addition future business park zones need to be closely integrated with centres or surrounding residential areas. Mixed use areas integrated with business park zones are also desirable. The aim is to at least moderate car usage by

ensuring good local networks of public transport, walking and cycling connections, and provide for a mix of activities – while recognising car usage will be significant.

In summary business park zones should be 'urban' in character with some restrictions on pure office development, a high quality pedestrian and 'ground level' environment and close to or linked with centres, with a range of transport options (including public transport and active modes such as walking and cycling)

Bulky goods and other activities should be resisted in industrial areas

Bulky goods and other retail activities should be resisted in industrial areas to ensure that legitimate industrial uses are not 'squeezed out' by increasing land values or reduced availability of sites, and to preserve a critical mass of retail which underpins public investment in infrastructure and services in existing retail centres and areas.

In general bulky goods uses should be restricted to those areas identified in the *Retail Centres Review* by Don Fox Planning which makes recommendations for Tuggerah Supa Centre and Lake Haven. The existing uses along Tuggerah Strait are also appropriate in this location and should be supported.

Warnervale Town Centre should be the higher order services and retail hub in the North Wyong area

Warnervale Town Centre has been identified as the pre-eminent centre for the new development areas in the north of the Shire. The centre should contain office and retail activities, as well as mixed use and higher density residential development. The centre should be able to capture higher order office activities, so subdivision patterns and development controls should allow for it to evolve and capture these opportunities. The subdivision pattern should allow for small lot fine grained uses but also – to attract 'pure' office uses - some large lots offering car parking rates that are competitive with business park areas which might otherwise attract large floorspace office uses. However, these sites in should be planned so they can evolve into higher intensity development sites. The key principle is to aim for a flexible development platform which can evolve to an urban environment over time. The town centre development is a catalyst location for surrounding development.

5.2 Strategic theme 2: Deciding on the best location for competing candidates for new enterprise corridor and business park zonings

Enterprise corridors should restrict allowable retail including bulky goods but are appropriate for the Craigie Avenue and North Wyong (Pacific Highway frontage) areas

Advice in the *Retail Centres Review* report suggests that there is ample supply of land for bulky goods in the areas it identifies, and that further zones for this use would represent over-zoning. The advice for bulky goods areas suggests they should be close to or on the approach to centres.

This is consistent with the CCRS that aims to "ensure that bulky goods retailing is not located on industrial land and is located in centres and nominated nodes"⁴⁸.

The *Metropolitan Plan for Sydney 2036* has a brief commentary on enterprise corridors.

Enterprise corridors continue to play an important role on some busy roads where flexible land use controls are needed to support activities that benefit from high levels of exposure. They may also help to buffer more sensitive uses such as residential development. These corridors may typically permit a range of land use controls although use of a B6 Enterprise Corridor Zone should be limited to areas of very high traffic volumes and where it is appropriate to allow a flexibility of land uses to enable productive use of the road corridor.

*The B6 Zone will not be appropriate for all busy roads and development for retail premises in this zone may be able to occur where it plays the role described above. The amount of retailing to be permitted in the B6 Zone should be set locally.*⁴⁹

⁴⁸ NSW DoP & I (2008), *Central Coast Regional Strategy*, p.31

⁴⁹ NSW DP & I, (2010), *The Metropolitan Plan for Sydney 2036*, p. 61.

This is somewhat indirect guidance. The 2005 Metropolitan Strategy provides clearer directions:

This (B6) zone and the associated controls will provide for uses such as nurseries, plumbing and building supplies, retailing, light industrial and ancillary offices. Retailing in these zones should be restricted to less than 1000 square metres of floor area¹⁰.

Based on the preceding commentary the following principles should be adopted in relation to enterprise corridors:

- An enterprise corridor is an appropriate and flexible zoning for busy roads where exposure and the productive use of the road corridor is important
- Retail and bulky goods proliferating on highway corridors in out of centre locations is not a desirable planning outcome, from a design or clustering perspective, and should be restricted to less than 1000 square metres (per development). This would mean bulky goods centres or major supermarkets would not be allowed but roadside fruit markets and minor retail ancillary to industrial activities would be allowed. Restricting floor space is preferable to a use based restriction as some of the uses which should be restricted, such as larger supermarkets which should anchor defined centres, are not defined in the standard LEP instrument and therefore not able to be excluded by a use based provision.
- Uses such as light industry, bulky goods premises, business premises, warehouse and distribution centres, nurseries, plumbing and building supplies, light industrial and ancillary offices are appropriate.

There are proposals for enterprise corridors in the Craigie Avenue and North Wyong (Pacific Highway frontage) areas. These are appropriate provided the restrictions on retail (and bulky goods retail) identified in the above principles apply. The Craigie Avenue proposition should seek to complement the hospital opposite and attract medical related activities. The proposal in the Retail Centres Review for an enterprise corridor on The Entrance Road/Central Coast Highway corridor at Long Jetty is supported provided it is consistent with the above principles.

It would be desirable if this approach to enterprise corridors was consistent across the LGA, to maintain the integrity of existing major retail centres while allowing for appropriate highway related retail and retail ancillary to industrial.

The Warnervale South West site could support some business park activities

The demand – supply analysis has indicated a need for a further future business park area. Council has identified a potential business park rezoning of the 'Warnervale South West' site identified in the North Wyong Shire Structure Plan (NWSSP).

Figure 9 shows an extract from the NWSSP with the proposed business park site (identified as NWSSP Precinct No. 4) in relation to the Warnervale Town Centre, Wyong town centre, the rail corridor and the F3 Freeway. The site is about 11 kilometres to the north from the existing Tuggerah Business Park, which is nearing build out (around 30 percent still vacant).

¹⁰ NSW DP&I (2007) Metropolitan Strategy: City of Cities, p. 73.

FIGURE 9. PROPOSED BUSINESS PARK – CONTEXT MAP



Source: NSW DP&I, 2012

Figure 10 shows the proposed business park from the Precinct 7A Structure Plan. The proposed Warnervale Town Centre is located to the north west of the site.

Though planning is advanced on the proposed Warnervale Town Centre there are still a number of key 'building blocks' to be resolved, including the timing of any new station (and potential implications for the continuing operation of the existing Warnervale station). Notwithstanding uncertainties associated with the timing of the development of the new Town Centre, planning for development in proximity to the existing station is proceeding.

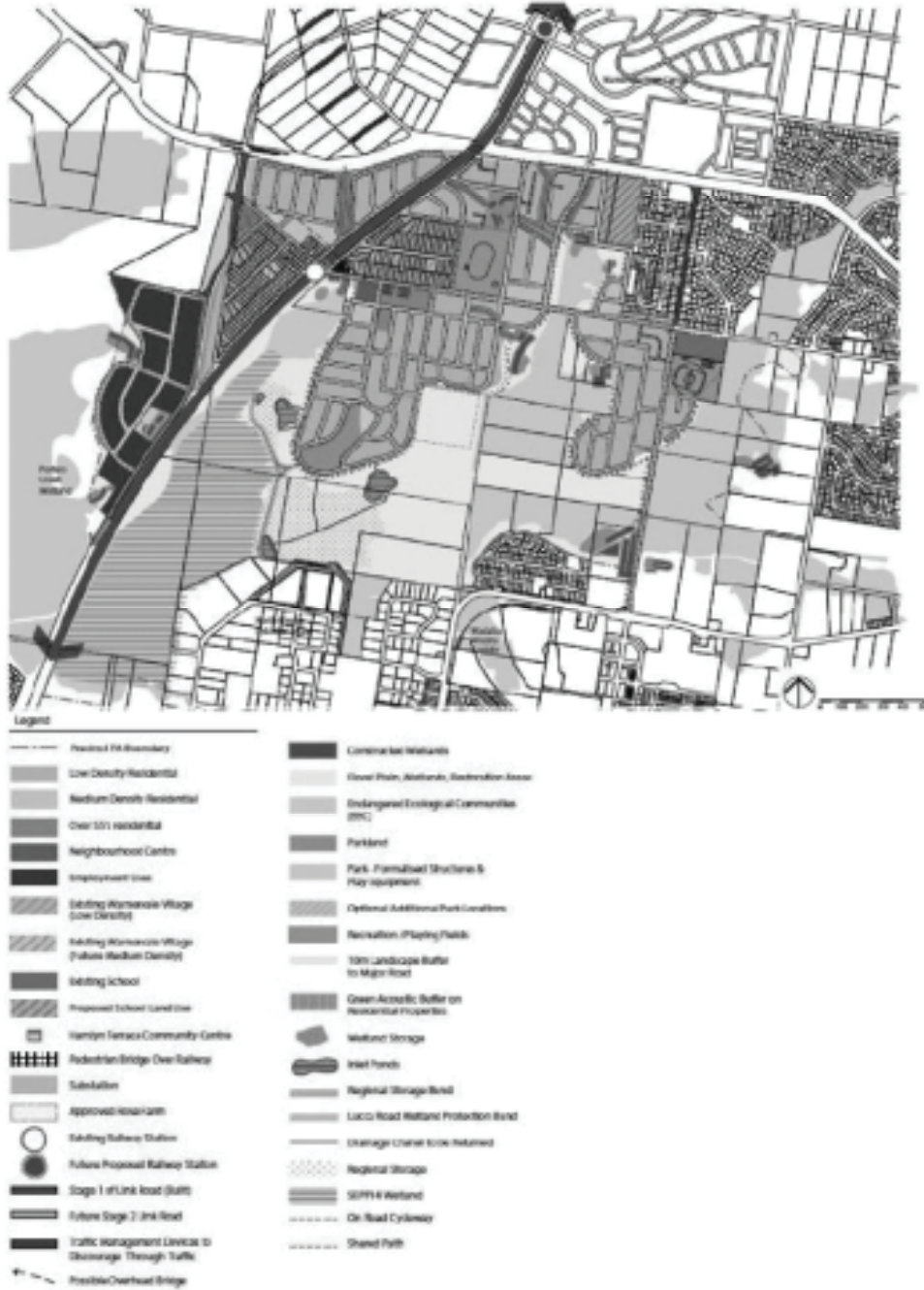
The link road to Sparks Road (coloured in red on the figure below) is already built and only on-site infrastructure needs to be provided.

Though the discussion on planning for business parks in the Metropolitan Plan for Sydney 2036 is more relevant to the metropolitan area rather than the wider Sydney region which includes the Central Coast⁵¹, the 'Criteria for Business Park Locations'⁵² are still useful for testing the current proposal.

⁵¹ NSW DP&I (2010), The Metropolitan Plan for Sydney 2036, p. 137.

⁵² *ibid.*

FIGURE 10. PROPOSED BUSINESS PARK SITE – PRECINCT 7A STRUCTURE PLAN



The suggested criteria are as follows:

- access to public transport corridors (preferably rail)
- links to freight corridors and major transport nodes
- land area (50 – 180 hectares) to allow expansion to accommodate 8000–40,000 employees

proximity to workforce (within 30 minutes commute)
business parks should have a relationship to adjoining economic infrastructure e.g. hospitals, universities, educational facilities, research institutes or clusters of knowledge-based activity⁵³

Each of these criteria is addressed in turn in Table 25.

TABLE 25. METROPOLITAN PLAN FOR SYDNEY 2036 BUSINESS PARK CRITERIA AND WARNERVALE NORTH EAST

Criteria	Commentary
Access to public transport corridors (preferably rail)	<p>The proposed business park would be located 500 metres from the existing Warnervale train station (and a further two kilometres from the proposed Warnervale town centre station). As a comparison, the Tuggerah Business Park is located 650 metres from the Tuggerah train station.</p> <p>This criterion is more relevant to the Sydney metropolitan context where the rail network (and to a lesser extent buses) serves commuter and journey to work trips more effectively. Currently around 2 percent of work trips to the Tuggerah Business Park are by train and 2 percent by bus (90 percent by car). The more relevant consideration is the extent to which the business park will provide employment for 'locals', which is expected to be high and how local public transport and buses in particular, and alternative transport options (cycling, walking) are supported by the detailed design.</p>
Links to freight corridors and major transport nodes	<p>The proposed business park would be located 800 metres from the Sparks Road and a further 2.5 kilometres from the F3 Freeway. As a comparison the Tuggerah Business Park is located 2.1 kilometres from the F3 Freeway. Though a link road is not yet in place the site is about three kilometres from the Old Pacific Highway and the North Wyong Industrial Estate.</p>
Land area (50 – 180 hectares) to allow expansion to accommodate 8000–40,000 employees	<p>The proposed business park is a total of 33 hectares in size (the existing Tuggerah Business Park is 49 hectares). While this is a lot less than the size suggested by the criterion, the regional context and the more modest scale of the future potential (compared to the metropolitan area) needs to be considered. The demand analysis shows that there is moderate but sufficient demand for a further business park zone, and given this the proposition is reasonable given its regional context and the precedent created by the successful Tuggerah Business Park.</p> <p>The land immediately to the west of the proposed Precinct 7A Business Park is subject to a Property Vegetation Plan under the Native Vegetation Act 2003 administered by the Catchment Management Authority (CMA). While the boundary of this land may be adjusted through negotiation, the process is quite involved.</p>
Proximity to workforce (within 30 minutes commute)	<p>The Central Coast has a population of 300,000 and the Lake Macquarie LGA a population of about 200,000. Given the site's location close to the F3 a good share of this population (3-400,000 in total) would have access to the development in about 30 minutes by car. The immediate Precinct 7A area is being planned for about 6000 people and the proposal will be highly accessible to this future population.</p>
Business parks should have a relationship to adjoining economic infrastructure e.g. hospitals, universities, educational facilities, research institutes	<p>In time Warnervale (whether in the existing or future town centre location) is likely to host more educational and medical facilities. As it is the Wyong hospital is only about 4-5 kilometres away to the east along Sparks Road (and closer than it is to the Tuggerah Business Park)</p>

The proposal rates well against these criteria, insofar as they are relevant to a regional location such as Wyong. Access and links to arterial and freight corridors are particularly strong. The population within 30 minutes (roughly estimated at perhaps 3-400,000 now) is growing and will continue to need local job opportunities to minimise commute times.

The CCRS also offers some strategic planning directives for business parks. The importance of transport corridors is also raised, although the focus here is less on public transport corridors, given that public transport provision is not as widespread or frequently available in Wyong LGA as in metropolitan Sydney. The CCRS suggests that the Regional Economic Development and Employment Strategy:

- will include a framework for the development of future business parks that:*
- prohibits office-only activities in out-of-centre locations.

⁵³ NSW DP&I (2010) Metropolitan Plan for Sydney 2036, p. 137.

- sets a maximum percentage of office floor space within an out-of-centre commercial complex where office floor space is integrated with activities such as manufacturing and distribution.
- ensures that business parks are strategically located near major transport corridors.²⁴

The Regional Economic Development and Employment Strategy does not appear to set such a framework. Nevertheless, issues for the Warnervale North West site against these items are shown in Table 26.

TABLE 26. CENTRAL COAST REGIONAL STRATEGY BUSINESS PARK 'FRAMEWORK' AND WARNERVALE NORTH EAST

Framework element	Commentary
Prohibition of office-only activities in out-of-centre locations	This site can be considered to be part of a centre if planned in an integrated way – and linked to the existing railway station and village (which will grow over time) by appropriate transport access, including walking and cycling and linking activities such as mixed use. Limiting the amount of 'pure office' in the precinct will be critical to ensuring that the Warnervale Town Centre develops as intended (advice on ensuring these opportunities are provided in the Warnervale Town Centre is included under strategic theme 1)
Set a maximum percentage of office floor space within an out-of-centre commercial complex where office floor space is integrated with activities such as manufacturing and distribution	This is a more restrictive requirement but two considerations are relevant. <ul style="list-style-type: none"> ■ If the business park is considered to be in a centre then the element would not apply. ■ If the requirement applied to the whole site (say 30 percent total office), as it implies, then the requirement could be met.
Ensure that business parks are strategically located near major transport corridors	The site achieves this.

Some other points to note include the following:

- The business park will inevitably compete with the proposed Warnervale Town Centre in terms of office oriented employment but this competition can be minimised if the town centre is promoted to include a small business retail and service role, and if 'pure office' development in the proposed business park is limited to say 30 percent of the total floorspace. It can complement rather than compete 'head to head'.
- A great advantage in terms of early development is the single ownership and lack of fragmentation. Existing and potential future competing sites such as Bruce Crescent, Hue Hue Road and WEZ have fragmented ownership issues and are more environmentally constrained. It is closer to the freeway than North Wyong Industrial Estate and a lot of other potential estates. The other sites do not have the infrastructure and the cost of development is therefore higher at these other sites.

SGS Economics and Planning's opportunities and constraints analysis identifies Light Industry as the most suitable use for this site, followed by Business Park and Urban Services. It is relatively unconstrained.

The link road is in place and early development is possible (in comparison to other sites such as those identified in the NWSSP and WEZ). This would be an advantageous in marketing the residential development to follow in Precinct 7A.

The Council's Precinct 7A Business Park proposal is a reasonable one given the regional context. It will be important to ensure it is provided with public transport access to neighbouring residential areas as they develop. Integration and links to the adjacent residential development area is also critical to the 'urbanity' of the development.

To maximise the prospects for success, and to ensure appropriate consideration of the future of the Warnervale Town Centre and integration with surrounding land uses and transport it will be desirable to develop the site on a 'master planned' basis. This will ensure that the lot sizes, access arrangements and ultimate uses are consistent with the principles embodied by the discussion above and the proposed controls. Council's ownership of the site will provide for this and enable it to act as a catalyst for development. It is recommended that Council develop the site progressively according to such a plan, rather than sell the site off and allow it to develop in a more ad hoc fashion.

²⁴ NSW DoP & I (2008), Central Coast Regional Strategy, p.59.

5.3 Strategic theme 3: Creating incentives and ensuring Wyong is cost competitive to attract jobs to employment land areas and achieve job targets in the CCRS

A Council 'task force' should identify and offer appropriate incentives and assistance to industry

There is an overwhelming message from the consultation with industry representatives: Wyong Shire appears to be losing ground in competitiveness for industrial development (though the GFC has dented prospects for industrial development more generally and other regions are also affected).

While the reduced population growth and wider subdued demand generally are acknowledged, particular and local issues are also highlighted. As nominated by the industry representatives they include:

- offers of 'incentives' by competing areas such as the Hunter
- inflexible development controls relating to uses and subdivision (lot size) controls
- unhelpful Council attitudes to approvals and a 'lack of commercial perspective'
- high developer charges, and
- unreasonable environmental hurdles.

Developers and their representatives have an interest in lowering the hurdle to development, sometimes unreasonably. However, there did seem to be some consistent and earnest sentiment amongst the participants in the consultation. It is not within the scope of this study to analyse all these claims though some preliminary analysis of comparative developer charges in the wider region suggested that Wyong Shire may not be unreasonably out of line in this regard and standardised zoning and strategic frameworks suggests that use controls at least are likely to be similar in industrial areas from council to council. Suggestions for 'freeing up' controls will also emerge from this study (suggestions have already been made for this in strategic locations such as Tuggerah Straight and on the Pacific Highway frontage at North Wyong).

Nevertheless, it is worth investigating these industry claims more thoroughly because a competitive employment lands environment will be fundamental to growth prospects.

A Council 'task force' should be established to benchmark Wyong Council against Gosford, Lake Macquarie, Newcastle, Maitland and Cessnock Councils in relation to:

- any available incentives and direct assistance offered to industry
- relevant numeric development controls (FSR, heights, setbacks, car parking)
- developer charges
- council processes related to approvals
- environmental controls, and
- infrastructure investment programs.

The findings from this work could be developed into marketing and branding materials to promote the region.

Any appropriate adjustments that can be made to practices in the Shire, without compromising environmental standards, strategic development objectives, or Council's financial sustainability, should be considered.

In addition, the issues of individual businesses contemplating major future investment in the Shire or businesses with specific problems, could be targeted and 'case managed'. The consultation for the study indicated a high level of knowledge of detailed issues facing individual businesses and there could be a forum and process established to deal with these expeditiously.

In addition to considering issues for particular businesses, the task force should also have a role in providing the settings and conditions for the development of the Wyong Employment Zone and Bushells Ridge areas. These are major aggregations of land where development expectations are high. However, the sites are complex with environmental and significant servicing constraints and potentially multiple roles to fulfil (from providing local service industry opportunities to hosting state significant freight and logistics uses). Without focussed attention these issues will not be addressed in a coordinated way. The taskforce should also prepare an action plan for the effective long term development of these sites.

The structure of the taskforce will need to be discussed with and agreed to by Council but it would be desirable if it had senior public officials and industry representatives, for example:

- relevant senior Wyong Shire Council officials
- senior representatives from state government including environment, infrastructure and planning agencies (to be identified with reference to the Employment Lands Taskforce run by the Department of Planning and Infrastructure)
- industrial property representatives (such as from peak bodies such as the PCA but also from the local area).

It is not appropriate to have individual land owners on this task force. However, formal consultation with land owners will be critical to identify issues and constraints to development. The taskforce should have a relatively narrow agenda to ensure it is effective, and work to a strategic plan with achievable targets. The taskforce could be serviced by Council staff or by a newly appointed person charged with addressing the agenda outlined here.

Target relevant sectors highlighted in the REDES

Economic development efforts should be extended to attracting sectors identified in the Regional Economic Development and Employment Strategy. Table 27 'lines up' the REDES priority uses and the appropriate Wyong Shire precincts suggested for these priorities.

TABLE 27. REDES PRIORITY USES AND APPROPRIATE PRECINCTS

REDES priority uses	Wyong Shire Employment Lands Response
Logistics cluster: distribution centres, intermodal hubs, warehousing and storage, and road transport services, education and training	WEZ and Bushells Ridge are ideal long term prospects for this cluster. When a high value proposition arises development constraints are likely to be addressed. Best addressed by coordinated planning for these two major precincts.
Food cluster: manufacturing, packaging, refrigeration, distribution, maintenance services, research and development.	Wyong has an established food industry presence with Sanitarium, Mars foods and Bluetongue Brewery. North Wyong and Berkeley Vale have potential to host more of these uses in the short to medium-term.
Health cluster: health research centres; health education centre; health precinct	Craigie Avenue should be rezoned as appropriate for employment uses to accommodate this sort of development. The Precinct 7A Warnervale South West Business Park is also appropriate for this type of use.
Green industries cluster: environmental R&D, water management, sustainable energy; architecture, urban planning	It makes sense that this would be the focus for future commercial development in the new Warnervale town centre and in Tuggerah Straight as part of the proposed intensification in that area.
Business services: call centres, back office functions, support centres	Should be a target for Gosford Regional City but might also be accommodated in the Warnervale South West business park. However, the precinct itself and any precinct extension (to the west for example) should be 'non-conventional' and work with and make a virtue of any environmental constraints (consistent with the 'green industries' cluster above)
Government: government agencies – regional head quarters, administrative offices, regional service centres	Not relevant to Wyong Shire (should be a target for Gosford Regional City)
Manufacturing cluster: building materials, modular components, products, green building products, and engineering.	North Wyong is ideally placed to host such uses; and North East Warnervale in future.
Tourism cluster: (short stays, conferences, eco-tourism and events) accommodation, hospitality, cultural services, retail.	Not relevant to the 'industrial' employment lands which are the focus of this study.
Ageing cluster: expanded provision of aged services; research centre on ageing issues, including health, lifestyle, education, aged care	Not relevant to the 'industrial' employment lands which are the focus of this study.

Investigate infrastructure financing and funding alternatives

Funding infrastructure to service new employment precincts is a major challenge in places like the WEZ and Bushells Ridge. Some appropriate principles that should underpin systems of development contributions include the following:

- minimise the up-front funding burden on development (meaning that a mix of approaches including recurrent charges is desirable)
- limit up-front contributions to infrastructure items whose cost of delivery varies significantly from development location to development location (and which are absolutely required prior to development commencing)
- distinguish between the types of development contribution and the rules of 'reasonableness' that might apply to them – up-front user charges, impact mitigation payments, betterment levies and inclusionary zoning contributions ('lumping' charges with different objectives into the development contribution mix has sometimes created an onerous funding burden for development).
- uphold the nexus principle (that is ensure that the funding mechanism chosen relates to 'who benefits' – i.e. the wider the beneficiaries, the wider the source of funding, new development shouldn't pay for infrastructure that existing development will also benefit from).

The approach to development contributions for industrial land in Wyong needs to be critically assessed against these criteria. The funding approach should be brought into line with these criteria as much as possible.

It is likely that the requirement to fund an increasing share of the cost infrastructure items has drifted to earlier in the development process, contravening the first and second of these principles. This is typically because local and state governments have become more debt averse (and are reluctant to borrow for infrastructure with pay back via rates or special recurrent funding arrangements). Developers are unlikely to be able to forward fund infrastructure where the payback from development that follows is over a long and uncertain time period.

This up-front 'financing' of infrastructure issue (where 'funding' is the mechanism by which the capital or debt is repaid) is a key impediment to earlier development. Three alternatives are as follows:

- Seek forward funding from state government sources for key precincts where development effort is to be concentrated – perhaps in the Tuggerah area (where remedial drainage works might be necessary) or perhaps more likely parts of WEZ or Bushells Ridge according to the structure planning process detailed earlier. This will be based on an appeal as to the strategic nature of these sites.
- Another alternative is to review the traditional life cycle planning approach to infrastructure provision across all significant categories (water, sewerage, energy, roads). Typically, the life cycle and centralised provision approach to these infrastructure items calls for comprehensive and large scale schemes looking 30 years or more to the future. The associated infrastructure standards are likely to be prescriptive, enduring and costly to satisfy. It would be desirable to move to a more performance based approach, in negotiations with infrastructure agencies. This would specify the outcomes expected of each infrastructure item but allow for these to be satisfied by individual developers or by group schemes which utilise, for example:
 - temporary infrastructure with a limited life span and perhaps serving single sites (once established the development may be in a position to also contribute towards the cost of the full scheme in due course)
 - alternative technologies including decentralised provision of infrastructure which would typically require a development agreement allowing the developer (or developers) to 'opt out' while guaranteeing that service outcomes will be met.
- Another alternative is for council to work up a scheme with neighbouring councils (e.g. with Gosford and Lake Macquarie) whereby unspent s94 or other infrastructure contributions are 'pooled' and used to finance infrastructure in a diversity of locations across the region, on a strict payback and monitored basis. The idea here is to gain some flexibility in the timing of the use of infrastructure funds and to somewhat effectively spread the risk.

The proposed taskforce would have carriage of this agenda to review and propose alternative infrastructure financing and funding approaches.

Transform Tuggerah Station Industrial into an enterprise and business development area in the medium term

The Tuggerah Station industrial area is generally underdeveloped (FSR less than 0.17 to 1) and is in some ways a residual enterprise area, particularly the Lake Road part of the precinct. There is no urgent need to modify the controls in this area but as pressure grows for development, alternative futures will need to be contemplated.

Council engineers have recently prepared a new drainage and road scheme for the area with a cost of almost \$7m (\$1.84m drainage and \$5.14m roads). Translated into a development contributions scheme, this threshold development cost would be a major disincentive to further development of the area. Two alternative options are worth exploring.

- The first would be to introduce a maximum FSR of say 0.2:1 and a maximum impervious surface, to maximise overland flow and absorption. Council engineers (or perhaps independent consulting engineers) would be asked to assess whether this could moderate the need for such an elaborate engineering solution and therefore the development costs. This approach would make the area a low cost, low intensity economic area.
- The second is to allow a much greater range of uses and development activities and more intense development, to generate the value to 'pay' for the increased engineering costs. A business development zone (with residential uses prohibited) would be introduced to facilitate the change.

The latter option is consistent with the idea discussed earlier of Wyong-Tuggerah as an economic enterprise centre. Council does not intend to undertake any review of these zonings in the immediate future as there is no urgency to do this, given the availability of land in the Tuggerah area for business purposes.

5.4 Strategic theme 4: Promote and secure the future for some strategic industrial areas (e.g. WEZ, Bushells Ridge, Berkeley Vale)

Promote Bushells Ridge and parts of WEZ for future freight and logistics uses

The Wyong Employment Zone (WEZ) and Bushells Ridge have long been slated for significant employment development. There is evidence of impatience from the consultation that major jobs growth hasn't followed the relatively recent rezoning of these areas.

At the same time, the REDES and consultation stakeholders recognise the medium to long term potential of the Shire as a location for freight and logistics. For example, the Wyong part of the Freeway offers the opportunity as a freight breakage point for northern derived materials heading south to Sydney and Melbourne. Woolworths is a major investor that has already identified the potential of WEZ as a location for distribution operations and in the interview for the audit conducted for this study identified that it employed 600 people out of this site.

Ultimately, these areas are strategically important for the Central Coast and for the Greater Metropolitan Region.

WEZ and Bushells Ridge are ideally located to take advantage of the potential in freight and logistics. However, these are generally long term prospects and it is important that the Council 'hold the line' in relation to these areas. Freight hubs in Sydney and Melbourne, and elsewhere around the world have long lead times from conception to delivery, spanning decades in some instances. The delivery depends on innovations and changes in approaches to distribution, land price pressures and on transport investments. In the next 15-20 years it is certainly probable that the F3 will be fully connected into Sydney's motorway system. In 50 years the F9 corridor, bypassing Sydney to the west, may have developed. If Wyong Shire Council allows the area to be 'cut up' into small subdivisions and strata development over major parts of Bushells Ridge and WEZ then a major opportunity will have been lost. This is an opportunity for the Council to take a long term perspective.

There are already some worrying signs. The so-called 'Hunter' land already has approval for a reasonably small lot subdivision and there is a Part 3A proposal for relatively small lots at the south Darkinjung site. The core Darkinjung area in Bushells Ridge has a Part 3A proposal with larger lots. Ideally, there would be a greater share of the total site with larger lots (i.e. lots of two to four hectares minimum) and fewer lots less than two hectares.

For the analysis in this study the WEZ site has been allocated to four different precincts, with different locational and spatial characteristics, and potentially different roles. The four identified precincts are:

- WEZ Airport Lands

- WEZ North West - Warner Industrial Park
- WEZ Sparks Road North
- WEZ Warnervale Business Park

There is already some development here (principally in the WEZ Warnervale Business Park) and there may be some shorter term additional development potential possible (probably in the Sparks Road North and Warnervale Business Park precincts). However, a good share of these precincts needs to be preserved for strategic freight and logistics uses.

To manage this tension between short and long term demands, a controlled but flexible mix of different lot sizes in the WEZ area should be provided for. In part of the WEZ area (probably the Sparks Road North and Warnervale Business Park precincts) controls would allow for say 20 percent to be subdivided into lots of less than say 2000 square metres, with the remainder to be protected for lots of say 4 hectares or larger (the WEZ North West - Warner Industrial Park and Airport Lands might be 'land banked' and preserved for larger lot users only or for future consideration). These ideas and this split are indicative only, to illustrate the concept, and more research and a structure plan is required to identify the best approach. The structure plan, and planning for the associated infrastructure 'roll out', would be a focus for the proposed Taskforce.

The Bushells Ridge and WEZ areas are of state significance similar to the proposed Western Sydney Employment Area which is currently the focus of a significant structure planning effort (see box below). Wyong Council can rightly argue that Bushells Ridge and WEZ should be 'next in line' for this sort of detailed planning effort.

Broader Western Sydney Employment Area Structure Plan

The Department of Planning & Infrastructure has commenced work on the Broader Western Sydney Employment Area Structure Plan. This work is being undertaken in consultation with Liverpool, Fairfield, Penrith and Blacktown Councils and will investigate new employment lands in Western Sydney to help bring jobs closer to home.

Creating employment in Western Sydney and promoting economic development is a key objective in the Government's Sydney Metropolitan Strategy. The Broader Western Sydney Employment Area extends from the M4 / M7 hub south west to Badgerys Creek. The study area covers approximately 10,000 hectares. A draft Structure Plan will be prepared which identifies new employment land at a strategic, regional scale.

Source: DP & I, 2012.

Promote Berkeley Vale industrial area as a future strategic industrial precinct

Berkeley Vale is located on Enterprise Drive, which is an important B-double route. It is already home to Sanitarium Health Foods, Mars foods and Linfox food services distribution centre. Its location on the B-double route and close proximity to the F3 Freeway as well as the availability of existing servicing make it ideal for future large lot development. Although the Berkeley Vale Industrial Estate is largely developed there are still opportunities for additional investment and clustering of large scale manufacturing and warehouse uses.

5.5 Strategic theme 5: Directions for innovation to allow for 'non-conventional' economic and employment activities including home based work

The brief for the study called for innovation to encourage employment development and to reflect emerging economic trends. The study has proposed to 'free-up' controls for employment activities in strategic locations such as Tuggerah Straight, Tuggerah station industrial, the Pacific Highway frontage at North Wyong and also at Craigie Avenue. Another opportunity is to encourage and facilitate home based business and occupations. While this is outside the scope of the industrial and employment land which is the focus for this study, some ideas are explored below.

Allow some home trade and businesses in selected large lot residential areas

The attraction of home based work is flexibility in work hours and the avoidance of a commute to work. Home-based work is also attractive to mature age and disabled workers, and can therefore promote benefits linked to

increased workforce participation, and enhanced social capital, among these groups. It is anticipated that the NBN will enhance prospects for home based work, as remote access to central data and information repositories is made easier and video conferencing and general long distance communications are enhanced.

Within the Wyong Shire there are some large lot areas where home based trade and businesses could occur without major impact on surrounding residential amenity. Bruce Crescent is one such location where this could be allowed as a transition to more intense employment activities in future (as envisaged by the NWSSP). Other areas which could be investigated for home based trade and business include Fountaindale and areas around Doyalson.

In terms of facilitating more traditional home-based work, provided that 'home occupation' and/ or 'home business' are permissible in the appropriate residential areas, there is little else that can be done to facilitate home-based work in residential zones. In the Standard Instrument 'home occupation' involves only residents of the dwelling, whereas 'home business' can involve up to two non-residents.

To enable home-based work Council will need to provide controls for home based businesses other than offices. The following controls should be applied to home based businesses:

- the use does not create disruptive levels of noise, smells or fumes to surrounding uses
- the use does not result in a significant level of traffic or pedestrian movement that may disrupt the function of surrounding uses
- there are adequate on-site servicing and parking facilities
- ensure that residential zones in the LEP do not prohibit potential home businesses in designated residential areas ('home occupation' and/ or 'home businesses' should be permissible in appropriate residential areas)
- ensure that local centre zones in local/village centres permit the development of business supporting services for home based businesses.

Encourage and facilitate office and home business in Wyong Town Centre

The opportunity for Wyong Town Centre to host major office development may have passed.

It is possible that there are onerous costs for prospective commercial developers in the centre and, combined with apparently lacklustre market conditions, these represent a deterrent. An option for consideration – and to possibly reduce costs and thereby 'bring forward' development is to 'free up' the market for car parking related to office development. Council could decide on an office parking space 'cap' for the centre given capacity and alternative transport opportunities, and an estimate of office development potential. Developers would be free to provide as little or as much on-site parking toward this cap as they like. Developers choosing to provide no or reduced on-site parking would have to contribute funding in-lieu up to a benchmark toward a centralised above ground structure to be ultimately provided by council (this would have to be costed and the number of spaces proposed included in the ultimate 'cap'). Developers choosing to provide on-site parking would be doing so according to their own market perspectives, rather than prescriptive planning controls.

This innovative approach to parking is somewhat ambitious but may provide more flexibility to potential office investors. There may be suitable sites for office development north of Anzac Avenue and south of North Road but development opportunities may be subject to the sort of innovations outlined here and are therefore medium to long term options.

In the shorter term, the town centre can still make an economic contribution by providing opportunities for niche and boutique businesses. This would be facilitated by encouraging home occupations and live-work residential development. Businesses would have excellent connections to Sydney via rail and access to the services and enterprises in Tuggerah Straight and Tuggerah Business Park.

Explore opportunities for industry synergies and the application of an industrial ecology model

Industrial symbiosis is the process whereby the waste from one industry is used as a resource for other industrial operations or applications. This 'closed loop system' significantly saves on wastes going into landfill, waterways and the atmosphere. There can also be substantial economic benefits that accrue to industries participating within eco-industrial parks including savings that can be made by capitalising on localisation economies, avoiding compliance

costs and minimising the cost of inputs as well as the increased potential income that can be made by marketing a 'green' image and by receiving income from wastes.

Further work will need to be undertaken to identify opportunities for this approach in Wyong Shire but could include:

- Land-use zoning that allows for different types of industry to be located together in the one industrial park to enable industrial symbiosis to occur. At present there is also insufficient infrastructure available for the development of eco-industrial parks. As part of the planning process governments can also finance infrastructure through grants, subsidies etc., or they can provide the initial infrastructure to get the park started.
- Government can also act as an incubator for the commencement of an eco-industrial park by bringing together firms that can utilise each other's by-products.

Government can also work together with potentially interested parties to develop potential linkages between different firms. They can also coordinate the development of an eco-industrial planning body for the park to coordinate the activities of the firms in the future. Government can also make information about eco-industrial parks readily available and advertise the advantages of eco-industrial parks. This can be combined with a research and development role whereby the government investigates potential opportunities for the reuse of by-products from industry, and makes the results available to industry.

Precincts hosting power stations are clearly areas where waste heat is generated, and other activities occur which might be suited to industrial ecology innovations. The relatively high density employment areas around Tuggerah might lend themselves to a 'retrofit' of the sorts of technologies and approaches outlined here. WEZ and Bushells Ridge should also be considered for such innovations in the longer term.

The proposed taskforce could be charged to undertake more work on this concept and where in Wyong it might be suited to.

5.6 Implementation: meeting short, medium and long term demands in existing and proposed development areas, including a process for new release employment land areas

Wyong Shire's geography, waterways and terrain make it difficult to identify a strong 'structure'. Essentially the elements of the structure that can be identified are:

- coastal and lakeside residential development to the east of the Shire
- a major arterial north-south road corridor (F3) wholly to the west of the main settlement areas
- a minor arterial generally north-south corridor (Old Pacific Highway) linking the residential areas
- a rail line that tracks the minor arterial road corridor in the southern part of the Shire
- a substantial complex of mixed employment in the Wyong-Tuggerah area, amidst the south-central part of the residential settlement areas and a significant employment area (North Wyong industrial area) to the north of this
- isolated employment areas in outlying residential settlements
- key east-west roads (Sparks and Wyong Roads) linking residential areas to the major arterial
- large underdeveloped industrial areas along the main arterial corridor in the central part of the Shire
- environmentally constrained and rural areas in the central and western parts of the Shire.

New residential areas are proposed along the rail line and minor arterial corridor from the central to the northern parts of the Shire (phased in this order).

The advice from policy material – including the CCRS and REDES – is that there does not need to be major additional rezoning of land for industrial uses (the ELOP points out that the Shire has the lowest density employment lands and the most undeveloped employment land in the Sydney region). The demand-supply analysis in this report has confirmed this, with more than adequate overall capacity to meet demand; although there was a supply shortage in some precincts given conservative assumptions about supply capacity in most cases.

Of course the employment lands supply needs to evolve to support changes to industry and new economic demands, and with new residential release areas there will be a need to release land to provide accessible employment which is proximate to new settlement areas. Consequently, notwithstanding the spare existing capacity, there may be a need for marginal additions to the supply of industrial lands and to facilitate selective intensification.

Another point made in consultation is that the fragmented geography of the Shire works against the establishment of a 'critical mass' of employment and activity. It is difficult to create this in the absence of rapid growth but it does suggest that major further rezoning is not appropriate. Consolidation and intensification will be important strategies.

Based on this rationale, the needs and future directions analysis has allocated five categories to existing and potential precincts, guided also by the geographic and local structure issues identified above. These categories and the general actions necessary to realise these roles are outlined in Table 28.

TABLE 28. FUTURE ROLE CATEGORIES FOR INDUSTRIAL AREAS

Future role categories	Rationale for application given Shire 'structure'	Implementation
Consolidate current role ('business as usual')	Typically likely to apply to those areas where new demands and needs are modest and the precinct is functioning well given its context; most likely those precincts with a service industry focus servicing established residential settlements.	Translate current zoning into new standard template zones.
Transition, with intensification as appropriate	Appropriate for existing employment areas and centres in the 'heart' of the Shire in the Tuggerah and Wyong area with a strong relationship to residential areas nearby, where building a 'critical mass' from an existing base is possible and good transport (including public transport) connections exist.	Tailored 'upzoning' of either use or allowable development intensity. May need complementary infrastructure or economic development initiatives.
Promote and secure for longer term industry prospects	Appropriate for underdeveloped areas with attributes (that is, which offer a comparative advantage) aligning with longer term industry trends and strategic futures for the Shire; the F3 is a key attribute in this regard.	Translate current zoning into new standard template zones potentially with adjustment to subdivision or density controls to protect for longer term.
Selective new release to accompany residential and labour force growth in short to medium term	As the population grows and new settlements develop there will be a need for service industry development, as well as higher order employment nodes to provide future employment opportunities.	Re-zone in line with future demand and accompanying wider precinct planning and rezoning; prepare servicing and infrastructure plans as appropriate.
Reconsider in medium to long term	Not currently zoned for industrial or employment uses. No pressing need or justification for rezoning given observed supply-demand patterns.	No short term action necessary; review in due course.

Timing

Each of the existing and potential precincts is allocated according to this categorisation below (in and). For each precinct the proposed zoning, estimated timeframe for development and estimated future floorspace and jobs is also identified.

Note that the shaded cells in the tables below refer to floorspace and jobs due to absorption of excess demand under the base case scenario. The implied current potential for additional jobs is calculated in two ways. Current floorspace capacity is converted to jobs using each precinct's audited floorspace per job ratio. Where an audited floorspace per job ratio is not available, the LGA wide audited ratio of 177 square metres of floorspace per job is used. Moreover, note that floorspace at 2036 includes absorbed excess demand, and is limited by each precinct's capacity. Adjustments to the timing have been made based on development 'realities' and activity already underway.

While not considered as a part of this study, there are potential future employment land redevelopment opportunities when the power stations are decommissioned.

Each of the existing and potential precincts is allocated according to this categorisation in the tables below. For each precinct the proposed zoning, estimated timeframe for development and estimated future floorspace and jobs is also identified.

- For existing zoned and serviced precincts the timing is a guide to when the precincts might reach capacity.
- For existing zoned but unserviced precincts, the timing is a guide to servicing in the absence of a developer's preparedness to pay the full cost and bring forward a particular precinct. If however a developer is prepared to pay the full servicing cost for a precinct cited as longer term, then that will reduce demand elsewhere and slow the filling up of another precinct (unless the new development is in a category which represents 'new' demand or a new industry –such as a large intermodal terminal for example).
- For the areas which are not currently zoned the timing is a guide to future rezoning and servicing. However, these areas may be brought forward by a developer prepared to incur the servicing costs and again this may reduce demand elsewhere.

Council should commit to tracking supply / demand more effectively to provide the basis for regular reviews of industrial lands, and the timing of 'new release' and servicing proposed here. This may include systematically monitoring Development Approvals, Construction Certificates, water connections or updating the audit undertaken for this study.

TABLE 29. FUTURE ROLE FOR EXISTING ZONED INDUSTRIAL AREAS

Consolidate current role	Proposed zone	Timing of development	Floorspace			Jobs	
			Current	At 2036 (limited by capacity)	2036+ (remaining capacity)	Audited current jobs	Implied current capacity for additional jobs
Berkeley Vale Industrial	Additional opportunities for manufacturing and strategic industry growth. Large lots are ideal in this precinct given the strategic transport location on the B-Grade road network.	IN1 with a small amount of IN2 south of Enterprise Drive	254,299	284,963	0	557	67
Charmhaven Industrial	Local service role for established residential communities to continue. Future expansion for this precinct is possible to the west into the NWSSP identified "Warrenvale North East".	IN2	119,174	121,024	0	614	9
Doyalson Industrial	Regional and local service role to continue. There are ample future expansion opportunities for this precinct to the west, east and north-east into the areas identified in the NWSSP as "Doyalson West", "Doyalson East" and "Doyalson North East".	IN1	9,403	11,989	5,974	60	55
Fountaindale Industrial	Regional and local service role to continue	IN1	66,856	69,730	0	157	7
Long Jetty Industrial Area	Local service role for established residential communities to continue	IN2	4,459	4,459	0	25	0
Tumbi Gardens Industrial	Local service role for established residential communities to continue	IN2	32,058	32,441	0	192	2
Long Jetty Enterprise Corridor	Local enterprise role for established residential communities to continue	B6	-	-	-	-	-