CAMDEN COUNCIL

PLANNING PROPOSAL

2 IRONBARK AVENUE CAMDEN

Version 3

August 2017

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Executive Summary

The subject site is located on the corner of Ironbark Avenue and the Old Hume Highway, Camden. The site is zoned IN2 Light Industrial under the Camden Local Environmental Plan 2010 (Camden LEP 2010) and is surrounded by R2 Low Density Residential, R3 Medium Density Residential and IN2 Light Industrial zoned land.

This Planning Proposal seeks to amend Camden LEP 2010 to allow for the inclusion of a medical centre as an additional permitted use on the subject site. This would be achieved by making an addition to Schedule 1 Additional Permitted Uses of Camden LEP 2010.

1. Introduction

The subject site is legally known as Lot 3 DP 243156, 2 Ironbark Avenue, Camden and is currently zoned IN2 Light Industrial under the Camden LEP 2010. The proponent is intending to use the site as a medical centre. However, a medical centre is prohibited under the current zone. This Planning Proposal seeks to permit the additional use of a medical centre on the subject site, and provides justification for the amendments to Camden LEP 2010.

The Planning Proposal has been prepared in accordance with Section 55 of the Environmental Planning and Assessment Act 1979 (EP&A Act 1979) and guidelines published by the Department of Planning & Environment, namely 'A Guide to Preparing Planning Proposals' to ensure all matter requiring consideration are appropriately addressed.

It is envisioned that the amendment to Camden LEP 2010 to incorporate the additional permitted use of a medical centre on the subject site will provide an essential health service and provide opportunities to increase the local employment. It is proposed to reuse the existing building for the purpose of a medical centre that will provide benefits to the surrounding residential area and is considered to be compatible with the similar use in the locality such as the Camden Hospital and Camden Nursing Home.

At the meeting of 8 August 2017, Council considered a report on this Planning Proposal and subsequently resolved to forward this Planning Proposal to the Department of Planning and Environment (DPE) for a Gateway Determination.

2. Site Description and Context

2.1 The Site and Its Locality

The area that is the subject of this Planning Proposal is shown in Figure 1.

Figure 1: Locality Map (Source: Nearmap)

The subject land is located on the corner of Ironbark Avenue and the Old Hume Highway and has frontage to both roadways (refer Figures 1 and 2). The site is located approximately 2km south of the Camden Town Centre, 1.5km south of Camden Hospital, to the southwest of the Camden Nursing Home and to the west of the Camden Bypass. The subject land is located entirely within the Camden LGA.

2.2 Site Context

The subject site forms the northern portion of a small light industrial area known as the Ironbark Avenue Industrial Precinct. The predominant existing land uses in this precinct are service-oriented businesses including a veterinary clinic, vehicle and machinery sales yards and fitness gymnasium. The existing building located on the subject site is a single storey commercial style building previously used as a caravan sales showroom.

Surrounding Land Uses

The precinct is separated from surrounding land uses by roads. Nearby land use activities within the R2 Low Density Residential area, include the aged care facility and child care centre.

This limits the potential for the precinct to be expanded in future. The proposed additional use of a medical centre for the existing building will appropriately complement these land use activities and is unlikely to adversely impact the remaining light industrial activities in the precinct.

Figure 2: Site Plan

2.3 The Site

The land is owned by Stoross Pty Ltd and is commonly known as 2 Ironbark Avenue, Camden.

The site is irregular in shape with an area of 3,396m^2 and sits on the corner of Ironbark Avenue and the Old Hume Highway. The corner location would benefit from an activated street frontage along both Ironbark Avenue and the Old Hume Highway.

3.0 Statutory Framework

3.1 Zoning

The subject site is currently zoned IN2 Light Industrial under the provision of the Camden LEP 2010 (see Figure 3).

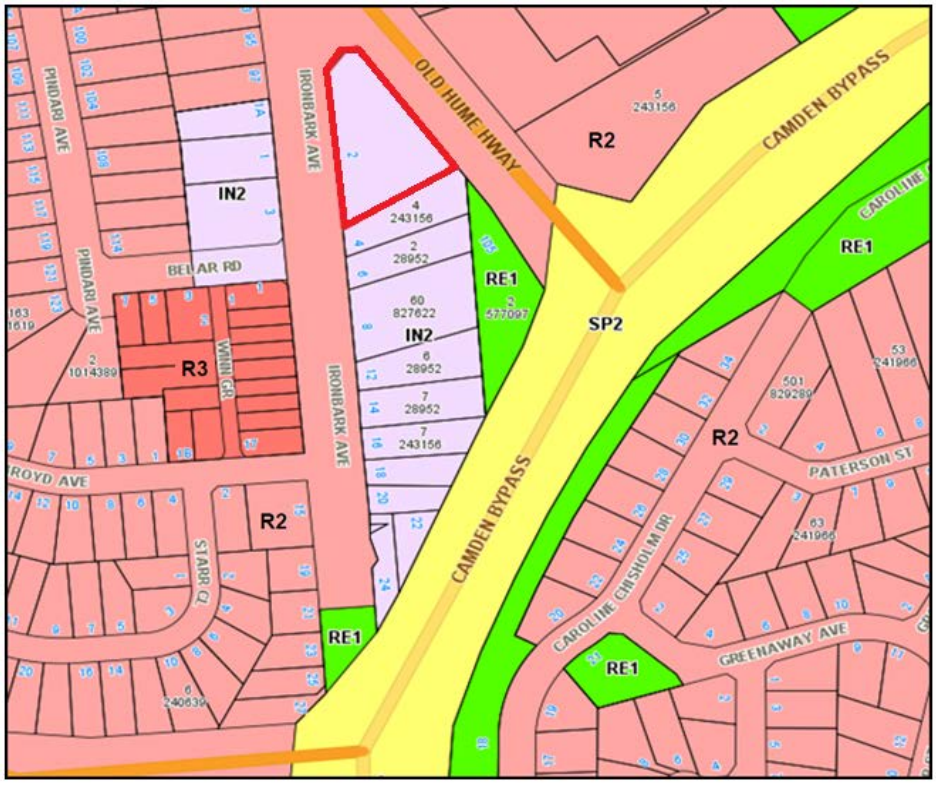


Figure 3: Zoning map (Source CLEP 2010)

The zoning map shown in Figure 3 demonstrates that the site is located in close proximity to existing R2 Low Density Residential and R3 Medium Density Residential.

A medical centre is prohibited under the IN2 Light Industrial zone provisions of Camden LEP 2010.

3.2 Other Controls

There are no other relevant planning controls applying to the subject site under the provision of Camden LEP 2010.

4.0 The Planning Proposal

4.1 Objectives or Intended Outcomes

The objectives of this Planning Proposal are to enable the inclusion of a medical centre as a permissible use at 2 Ironbark Avenue, Camden. This Planning Proposal recommends this be achieved by making an addition to Schedule 1 Additional Permitted Uses within Camden LEP 2010. The proposal does not otherwise seek to change or amend the existing IN2 Light Industrial zone which currently applies to the site.

4.2 Explanation of Provisions

The explanation of provisions provides a detailed statement of how the objective or intended outcomes are to be achieved through amending the Camden LEP 2010.

4.2.1 Summary

The objectives and intended outcomes of this Planning Proposal will be achieved by amending the following:

- Amending Schedule 1 Additional permitted uses within Camden LEP 2010 to enable a medical centre to be permitted on the subject site.
- Amending Additional Permitted Uses Map-Sheet APU - 011 within Camden LEP 2010 to show the subject site edged heavy blue.

There are no other provisions that are required to be amended. The amendment will permit a medical centre to be established on the subject site.

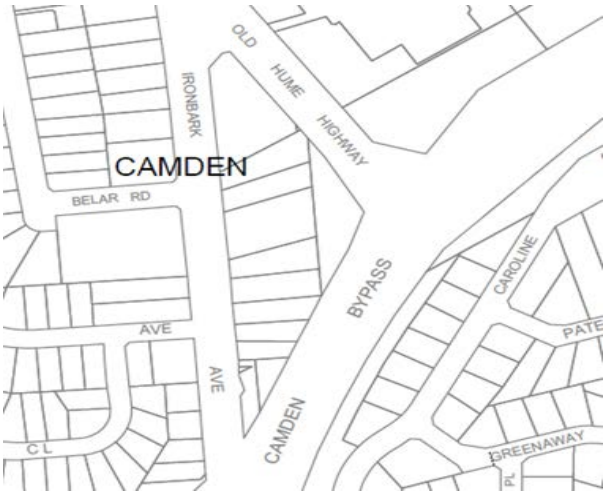
4.2.2 Detail

A detailed description of the proposed amendments to Camden LEP 2010 is outlined below:

Table 1 Draft addition to Schedule 1 Additional permitted uses

Proposed draft Clause within Schedule 1 Additional permitted use	**28 Use of certain land at Ironbark Avenue, Camden** (1) This clause applies to land at Ironbark Avenue, Camden, being Lot 3 DP 243156, as shown edged heavy blue on sheet 011 of the Additional Permitted Uses Map. (2) Development for the purpose of a medical centre is permitted with development consent.

Table 2 Draft amendment to Additional Permitted Uses Map - Sheet APU - 011

Existing Additional Permitted Uses Map	**Proposed Additional Permitted Uses Map**
	

4.3 Justification

The section addresses the need for the rezoning, identifies the background studies undertaken and details why the Planning Proposal is the best approach.

4.3.1 Section A - Need for the planning proposal.

Is the planning proposal a result of any strategic study or report?

The Planning Proposal is not directly related to a specific strategic study or report. However, the findings of the Camden Employment Lands Analysis 2015 and a submitted traffic and parking assessment report have been used to inform this Planning Proposal. Summaries of these studies are outlined below:

Camden Employment Lands Analysis

This study identifies the Ironbark Avenue Precinct as an area that, given its proximity to residential land use and the current dominance of service - oriented industries, can transit to a more complementary zoning regime such B1 or B2 centre zoning. The report is provided as Appendix 1.

Traffic and Parking

The Traffic and Parking Assessment Report was submitted in support of the draft Planning Proposal. The report is provided as Appendix 2.

The report considered the capacity of the site to facilitate on-site car parking and proposes a number of options to achieve compliance with car parking at the rate required for a medical centre in accordance with the requirements of the Camden Development Control Plan 2011. These include limiting the Gross Floor Area (GFA) of the building and/or exploring alternative parking arrangements.

The report concluded that the traffic impact on the intersection of Ironbark Avenue and the Old Hume Highway currently operates at a satisfactory level and, with the additional projected traffic volumes, would continue to operate at acceptable levels.

Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

The amendment to Camden LEP 2010 sought in this Planning Proposal is the best means of achieving the objectives and intended outcomes. Given the proposed amendments relate to statutory land use mapping and listed permissible use outcomes contained in the Camden LEP 2010, other available processes are not considered an appropriate means of achieving the objectives and intended outcomes promoted by this Planning Proposal.

4.3.2 Section B - Relationship to strategic planning framework.

Is the planning proposal consistent with the objectives and actions contained within the applicable regional or sub-regional strategy (including the Sydney Metropolitan Strategy and exhibited draft strategies)?

Plan for Growing Sydney

The NSW government released A Plan for Growing Sydney in December 2014. This Plan sets out the framework for Sydney's population growth for the next 20 years.

This Planning Proposal is consistent with the objectives and directions for 'A Plan for Growing Sydney' as demonstrated below:

Direction 1.4 - The Planning Proposal supports the goal to transform the productivity of Western Sydney through growth and investment to provide employment and local jobs in the area.

Direction 1.10 - The Planning Proposal supports the plan to deliver education and health services to meet Sydney's growing needs.

The Planning Proposal is consistent with the objectives and directions of A Plan for Growing Sydney.

Draft South West District Plan

The Draft South West District Plan (the draft District Plan) was released for public exhibition on 22 November 2016. The draft District Plan is a link to the Sydney Regional Plan - *A Plan for Growing Sydney*, and maps out the 20 year vision for South West District of Greater Sydney. The draft District Plan includes priorities and outcomes related to productivity, sustainability and liveability.

The table below outlines the District Priorities and how this proposal meets the respective requirements.

South West District Plan Priority	Compliance Statement
Productivity Priority 4: Protect and support employment and urban services land	The proposal aims to increase the opportunity to diversify the employment and job generation on the site.
Liveability Priority 7: Conserve heritage and unique local characteristics	The retention of the existing building and proposed re-use as a medical centre utilises an existing building and retains the amenity and character of the area.
Liveability Priority 12: Support planning for health infrastructure	The proposed inclusion of an additional use as a medical centre for the site achieves this priority.

The Planning Proposal is consistent with the priorities of Draft South West District Plan.

Is the planning proposal consistent with the local Council's Community Strategic Plan, or other local strategic plan?

Council approved the Community Strategic Plan (CSP) on June 2017. This plan is a road map for a long term community vision with key directions, objectives, strategies and indicators.

Key Direction 3 - A Prosperous Economy is about developing an environment that supports a diversity of business and industry to invest, establish, grow and be sustainable over time. Strategy 3.1.1 seeks to ensure employment, tourism and education opportunities are expanded across the LGA. Strategy 3.1.4 seeks to strengthen and support business growth and attract new industries.

The Planning Proposal is consistent with the directions and strategies of the CSP.

Is the planning proposal consistent with applicable state environmental planning policies?

The State Environmental Planning Policies (SEPPs) that are relevant to this Planning Proposal are identified below.

SEPP	Consistency	Comment
State Environmental Planning Policy No 1 — Development Standards	N/A	
State Environmental Planning Policy No 14 — Coastal Wetlands	N/A	
State Environmental Planning Policy No 19 — Bushland in Urban Areas	N/A	
State Environmental Planning Policy No 21 — Caravan Parks	N/A	
State Environmental Planning Policy No 26 — Littoral Rainforests	N/A	
State Environmental Planning Policy No 30 — Intensive Agriculture	N/A	
State Environmental Planning Policy No 33 — Hazardous and Offensive Development	N/A	
State Environmental Planning Policy No 36 — Manufactured Home Estates	N/A	
State Environmental Planning Policy No 44 — Koala Habitat Protection	Yes	The subject land does not contain any vegetation that could support a koala habitat. The site is turfed and does not contain any trees.
State Environmental Planning Policy No 47 — Moore Park Showground	N/A	
State Environmental Planning Policy No 50 — Canal Estate Development	N/A	
State Environmental Planning Policy No 52 — Farm Dams and Other Works in Land and Water Management Plan Areas	N/A	
State Environmental Planning Policy No 55 — Remediation of Land	N/A	
State Environmental Planning Policy No 62 — Sustainable Aquaculture	N/A	
State Environmental Planning Policy No 64 — Advertising and Signage	Yes	The proposal allows future development to meet the requirements of this SEPP.
State Environmental Planning Policy No 65 — Design Quality of Residential Flat Development	N/A	

SEPP	Consistency	Comment
State Environmental Planning Policy No 70 — Affordable Housing (Revised Schemes)	N/A	
State Environmental Planning Policy No 71 — Coastal Protection	N/A	
State Environmental Planning Policy (Affordable Rental Housing) 2009	N/A	
State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004	Yes	The proposal allows future development to meet the requirements of this SEPP.
State Environmental Planning Policy (Exempt and Complying Development Codes) 2008	Yes	The proposal allows future development to meet the requirements of this SEPP.
State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004	N/A	
State Environmental Planning Policy (Infrastructure) 2007	Yes	The site adjoins the Old Hume Highway, which is a classified road. The proposal allows future development to meet the requirements of this SEPP. Furthermore, a traffic report has been prepared to support this proposal which outlines that traffic impacts are acceptable.
State Environmental Planning Policy (Integration and Repeals) 2016	N/A	
State Environmental Planning Policy (Kosciuszko National Park—Alpine Resorts) 2007	N/A	
State Environmental Planning Policy (Kurnell Peninsula) 1989	N/A	
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007	N/A	
State Environmental Planning Policy (Miscellaneous Consent Provisions) 2007	N/A	
State Environmental Planning Policy (Penrith Lakes Scheme) 1989	N/A	
State Environmental Planning Policy (Port Botany and Port Kembla) 2013	N/A	
State Environmental Planning Policy (Rural Lands) 2008	N/A	

SEPP	Consistency	Comment
State Environmental Planning Policy (State and Regional Development) 2011	N/A	
State Environmental Planning Policy (State Significant Precincts) 2005	N/A	
State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011	N/A	The site is not within a Sydney drinking water catchment area.
State Environmental Planning Policy (Sydney Region Growth Centres) 2006	N/A	
State Environmental Planning Policy (Three Ports) 2013	N/A	
State Environmental Planning Policy (Urban Renewal) 2010	N/A	
State Environmental Planning Policy (Western Sydney Employment Area) 2009	N/A	
State Environmental Planning Policy (Western Sydney Parklands) 2009	N/A	
Sydney Regional Environmental Plan No 8 (Central Coast Plateau Areas)	N/A	
Sydney Regional Environmental Plan No 9 — Extractive Industry (No 2— 1995)	N/A	
Sydney Regional Environmental Plan No 16 — Walsh Bay	N/A	
Sydney Regional Environmental Plan No 20 — Hawkesbury-Nepean River (No 2—1997)	Yes	The site is currently zoned for light industrial purposes and has a commercial facility on the site. The proposal allows future development to meet the requirements of this SEPP.
Sydney Regional Environmental Plan No 24 — Homebush Bay Area	N/A	
Sydney Regional Environmental Plan No 26 — City West	N/A	
Sydney Regional Environmental Plan No 30 — St Marys	N/A	
Sydney Regional Environmental Plan No 33 — Cooks Cove	N/A	
Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005	N/A	

Is the planning proposal consistent with applicable Ministerial Directions (s.117 directions)?

Each s.117 Ministerial Direction is listed below with an annotation stating whether it is relevant to the Planning Proposal and confirming its consistency.

s.117 Direction Title	Consistency	Consistency of Planning Proposal
1.1 Business and Industrial Zones	Yes	The proposal will not adversely impact on viability of business or industrial zones in the region. The proposed amendment involves introduction of a site specific additional permitted use on land zoned for industrial uses, to facilitate development of a medical centre. *Camden Employment Lands Analysis 2015* (the Study) assists in future strategic planning for employment lands and decision making. The site is located within an area the Study identifies as the Ironbark Avenue precinct. The Study notes the precincts' access and exposure, however identifies that its small size, isolation and surrounding residential land uses limits its ability to expand in the future. The proximity to the surrounding residential and related land uses (including child care and seniors living uses) also heighten the potential for land use conflicts with the industrial precinct. Given the constraints of the precinct, the Study identifies that the Ironbark Avenue precinct can transition into a B1 or B2 centre with the provision of local retail and shop-top or medium density housing. The proposed additional permitted use will complement the surrounding residential land uses and reduce the potential for land use conflicts to occur. It will also allow for a higher intensity employment use to be established on the site, providing increased employment opportunities to the Camden Community. As such, the proposal encourages employment growth in a suitable location and does not significantly impact on the provision of industrial land supply in the area. As such, the Planning Proposal is consistent with this Ministerial Direction.
1.2 Rural Zones	N/A	This direction does not apply as the Planning Proposal does not affect land within an existing or proposed rural zone.

s.117 Direction Title	Consistency	Consistency of Planning Proposal
1.3 Mining, Petroleum Production and Extractive Industries	N/A	This direction does not apply as the Planning Proposal does not propose any modification to the permissibility or operational restrictions relating to extractive industries.
1.4 Oyster Aquaculture	N/A	This direction does not apply as the Planning Proposal does not incorporate any land within a Priority Oyster Aquaculture Areas and oyster aquaculture outside such an area as identified in the NSW Oyster Industry Sustainable Aquaculture Strategy (2006).
1.5 Rural Lands	N/A	This direction does not apply to land within the Camden Local Government Area.
2.1 Environment Protection Zones	N/A	This direction does not apply as the Planning Proposal does not propose any modification to the permissibility or operational restrictions relating to Environmental Protection Zones.
2.2 Coastal Protection	N/A	This direction does not apply as the Planning Proposal does not affect land within a coastal zone.
2.3 Heritage Conservation	N/A	The direction does not apply as no heritage items or areas exist within the subject site.
2.4 Recreation Vehicle Areas	N/A	This direction does not apply as the Planning Proposal does not affect land associated with Recreational vehicle areas.
3.1 Residential Zones	Yes	The Planning Proposal is consistent with this Ministerial Direction as there is no proposed amendment to the land use controls within the residential zonings. All provisions relating to facilitating the provision of housing are retained.
3.2 Caravan Parks and Manufactured Home Estates	Yes	The Planning Proposal is consistent with this direction as it does not modify provisions relating to the permissibility of caravan parks and the like.
3.3 Home Occupations	Yes	The planning proposal is consistent with this direction as it does not modify provisions relating to the permissibility of home occupations within dwellings.
3.4 Integrating Land Use and transport	Yes	The Planning Proposal is consistent with this Ministerial Direction. The Proposal will not result in any modifications to the adopted road and transport network infrastructure within Camden.
3.5 Development Near Licensed Aerodromes	N/A	This direction is not applicable as the planning proposal will not create, alter or remove a zone or a provision relating to land in the vicinity of a licensed aerodrome.

s.117 Direction Title	Consistency	Consistency of Planning Proposal
3.5 Shooting Ranges	N/A	This direction is not applicable as the Planning Proposal will not affect, create, alter or remove a zone or a provision relating to land adjacent to and/ or adjoining an existing shooting range.
4.1 Acid Sulphate Soils	N/A	This direction is not applicable as the Planning Proposal only relates to adding an additional permitted use on the site.
4.2 Mine Subsidence and Unstable Land	N/A	This direction is not applicable as the land is not identified as being within a Mine Subsidence area.
4.3 Flood Prone Land	N/A	This direction is not applicable as the Planning Proposal does not remove or alter provisions relating to flood prone land.
4.4 Planning for Bushfire Protection	N/A	This direction is not applicable as the site is not within an identified bushfire prone area.
5.1 Implementation of Regional Strategies	Yes	The Planning Proposal is consistent with this direction as the land is identified to accommodate an employment area.
5.2 Sydney Drinking Water Catchments	N/A	This direction is not applicable to the subject land.
5.3 Farmland of State and Regional Significance on the NSW Far North Coast	N/A	This direction is not applicable to the subject land.
5.4 Commercial and Retail Development along the Pacific Highway, North Coast	N/A	This direction is not applicable to the subject land.
5.8 Second Sydney Airport: Badgerys Creek	N/A	This direction is not applicable to the subject land.
6.1 Approval and Referral Requirements	Yes	The Planning Proposal is consistent with this direction as it does not alter any approval or referral requirements.
6.2 Reserving Land for Public Purposes	N/A	This direction is not applicable as it does not affect land identified under the SEPP to be reserved for public purposes.
6.3 Site Specific Provisions	N/A	This direction is not applicable as it does not propose any site specific provisions.
7.1 Implementation of A Plan for Growing Sydney	Yes	The Planning Proposal is consistent with this direction as it meets objectives of the *A Plan For Growing Sydney* through delivering local jobs and providing the opportunity for a diversity of employment outcomes.

4.3.3 Section C - Environmental, social and economic impact

Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

The Planning Proposal will not adversely impact on any critical habitat or threatened species, populations or ecological communities, or their habitats, environmental values or matters of environmental significance.

The subject site is located within an established urban area, which has already been identified as suitable for employment land use.

Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

This Planning Proposal seeks to implement amendments to the land use mapping under Schedule 1 Additional permitted uses within Camden LEP 2010 to permit a medical centre at the subject site which is currently zoned for industrial purposes. The amendment pertains to land already zoned and reuses the existing building on the subject site.

How has the planning proposal adequately addressed any social and economic effects?

Assessment of the economic and social impacts for the Ironbark Avenue existed due to the land being zoned for employment activities.

The proposed modification relates to land identified for employment with the proposal seeking to permit a medical centre over a parcel of land that is zoned for light industrial purposes. The minor amendment will increase employment opportunities in the area having a positive impact on economic growth for south-west Sydney and Camden.

4.3.4 Section D - State and Commonwealth interests.

Is there adequate public infrastructure for the planning proposal?

The subject area is within an existing developed area of Camden within South West Sydney. The Planning Proposal will not create any additional needs for public infrastructure for the locality.

4.4 Community Consultation

The Planning Proposal will be publicly exhibited for a period of 14 days, or in accordance with the Gateway Determination. Notices will be placed in the local newspaper and the exhibition material available at:

- Council Administration Centre, 70 Central Avenue, Oran Park (Hard Copy)
- Narellan Library, Queen Street, Narellan (Hard Copy)
- Camden Library, John Street, Camden (Hard Copy)
- Camden Council website (Electronic Copy)

4.5 Project Timeline

Anticipated commencement (date of Gateway Determination)	TBA
Timeframe for the completion of required technical information	TBA
Timeframe for government agency consultation (pre and post exhibition as required by Gateway Determination)	TBA
Commencement and completion dates for public exhibition period	TBA
Timeframe for consideration of submissions	TBA
Timeframe for the consideration of a proposal post exhibition	TBA
Date of submission to the department to finalise the LEP	TBA

5. Conclusion and Recommendations

This Planning Proposal seeks to amend Camden Local Environmental Plan 2010 to include a medical centre as an additional permitted use within Schedule 1 of the LEP.

The proposed use of the existing building for the purposes of a medical centre is complementary with the objectives of the IN2 Light Industrial zone and will provide the surrounding residential area with an important health care service. The intended future use for the site as proposed under this application will also contribute to the creation of employment opportunities within the health care industry for local residents in Camden. There are no adverse environmental, social or economic impacts relating to the proposed development.

The Planning Proposal has been prepared in accordance with Section 55 of the *Environmental Planning and Assessment Act 1979* (EP&A Act 1979). An amendment to Schedule 1 Additional permitted uses within Camden LEP is the most appropriate method to achieve the objectives of this Planning Proposal.

This Planning Proposal will have a positive outcome for the community and complement the existing land use of surrounding area. Accordingly, progression of this Planning Proposal by the Department of Planning and Environment is sought.

6.0 Appendices

Appendix 1: Camden Employment Lands Analysis – October 2015

Appendix 2: Traffic and Parking Report – July 2017

Appendix 1

Camden Employment Lands Analysis – October 2015

Camden Employment Lands Analysis

Camden Council

October 2015

MacroPlanDimasi

Prepared for: Camden Council

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Approved for release:

Name	Signature	Date
W. Gersbach		29/10/15

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Section 1: Introduction

1.1 Scope & Objective

MacroPlan Dimasi has been engaged by Camden Council to prepare an economic and market analysis to determine the appropriate type and quantum of industrial zoned land within the Camden Local Government Area (LGA).

The objectives of this assessment, as presented in the project brief, are:

1. To identify the current and future market demand for industrial (IN1, IN2) and business development (B5) zoned land in the Camden LGA;
2. To review the current planning controls applying to that land and ascertain as to whether the controls facilitate current and future demand; and
3. If the current planning controls do not facilitate development in accordance with the market demand, determine what the controls should be; and
4. To identify strategies and actions that will stimulate the development of industrial and B5 land in the Camden LGA.

1.2 Scope of Research

For the purpose of the study the following zone descriptions, consistent with the NSW standard planning instrument, are used:

- ***B5 – Business Development:*** *This zone generally seeks to accommodate employment land uses that require large floor plates, including warehouse and bulky goods developments. The zone seeks to accommodate commercial type land uses in a manner that supports traditional or established centres.*

- ***IN1 – General Industrial:*** *This is a traditional industrial zone which can accommodate heavy and light industrial land uses. Warehouse and logistics type land uses are also accommodated. Mostly, commercial or retail type land uses are prohibited.*

- ***IN2 – Light Industrial:*** *This zone caters for light industrial as well as warehouse type land uses. Heavy industrial land uses are prohibited. The zone is typically located adjacent to other sensitive land uses, such as residential, to minimise amenity impacts.*

Our research generally considers the existing and proposed supply of land zoned for the above industrial and business purposes and the market demand for such land.

Our research does not cover the demand for other business land that predominantly serves a retail/office purpose (B1 neighbourhood centre, B2 local centre, B3 commercial core) or mixed use purpose (B4 mixed use). The nature of our research, however, will consider where other business zones including the B6 Enterprise Corridor zone or the B7 Business Park zone may provide a more appropriate land use zoning outcome based on forecast employment needs.

1.3 Current Provisions

The Camden LGA currently provides for 426.6 ha of zoned employment land (including 367ha of zoned industrial land and 59.6ha of B5 land at Gregory Hills) as well as an additional 375.3ha of proposed industrial land supply across a range of precincts, predominantly located within the yet-to-be-released parts of the South West Growth Centre (SWGC). The existing zoned supply comprises a mix of IN1, IN2 and B5 zoned land.

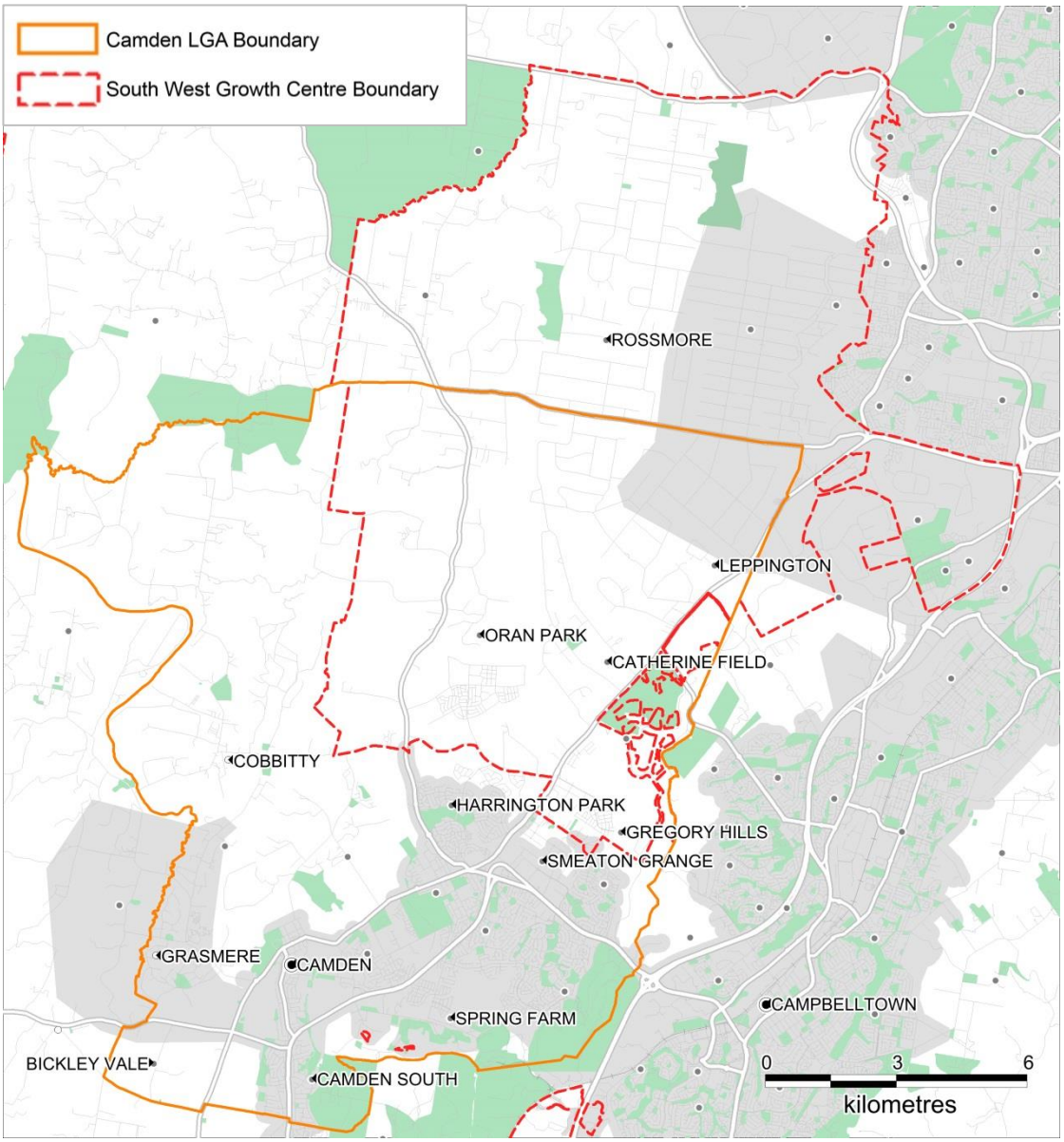
In addition, there is a further 92.3ha[1] of recently zoned B7 Business Park land located within the North Leppington precinct of the SWGC. The B7 land is noted, but is not included in our detailed assessment of employment trends and land capacity assessment, as it is outside the direct scope of this study.

Camden's provision of industrial and B5 land is accommodated, in a zoning sense, either within the South West Growth Centre (SWGC) or within the remaining

[1] According to the Employment Land Development Program (ELDP), 2015. Note - the ELDP does not record the presence or development of B5 Business land. Our estimates for this land are based on Camden Council's Lands Audit, April 2015.

'established' part of the LGA. The SWGC covers a large proportion of the LGA extending from its Liverpool boundary south to the Narellan township and generally east of The Northern Road. The SWGC falls under the planning controls of the Growth Centres State Environmental Planning Policy (SEPP). The remaining parts of the LGA are covered by Camden Local Environmental Plan (LEP) 2010.

Figure 1. Camden LGA and SWGC Map



According to the NSW Government's Employment Land Development Program (ELDP) the supply of industrial land is defined by its readiness for market consumption and its service availability.

As a general measure the ELDP seeks to achieve a series of 'supply standards' for industrial land stocks, expressed in terms of the number of years' supply that exists for land in different stages of the development pipeline.

The benchmark standards are:

- *Undeveloped zoned and serviced land* - *5-7 years supply*
- *Undeveloped zoned but not yet serviced* - *8-10 years supply*
- *Strategy identified land (unzoned)* - *20 years supply*

As of August 2015, there were 65.2ha of undeveloped, zoned and serviced industrial land in the Camden LGA (ELDP, 2015). Smeaton Grange accounted for the largest supply with 32.1ha of such land. In addition we estimate there to be a further 49.6ha of undeveloped, zoned and serviced 'B5' land at Gregory Hills.

In a Sydney context, the Camden LGA currently provides a relatively small quantity of industrial land (<3% of total zoned stock). Camden is also a relatively small provider of industrial land relative to the south-western Sydney region in general (with just over 10% of zoned stock across the combined LGAs of Camden, Campbelltown, Fairfield, Liverpool and Wollondilly).

Substantial quantities of new industrial land are anticipated as part of the ongoing development of the South West Growth Sector (SWGC). The vast majority of new industrial land is earmarked for the Liverpool LGA (over 1,900ha). The Camden LGA is expected to provide approximately 375.3ha of additional industrial land, predominantly in the northern parts of the LGA. Precinct planning for the release of this land has not yet commenced.

We note also that a further significant amount of industrial land is earmarked to augment Sydney's future supplies, in the form of the Western Sydney Employment Area (WSEA). The WSEA is located immediately north of the northern reaches of the SWGC in Camden.

Overall Camden and regional industrial land supplies are provided below. Note the table does not include current provisions of B5 land in the Camden LGA.

Table 1. Camden & Regional Industrial Land Supplies

Region		Developed [1]	Serviced, Zoned & Undeveloped [2]	Unserviced, Zoned & Undeveloped	Total [3]	Proposed Supply*
Camden - Supply (Ha)		178.4	65.2	123.4	367.0	375.3
Camden - % of SydMetro Supply		1.7%	14.5%	4.8%	2.7%	5.4%
SW Region - Supply (Ha)		2,685.0	174.5	536.5	3,396.0	2,435.0
SW Region - % of SydMetro Supply		25.5%	38.8%	20.8%	25.1%	34.9%
Sydney Metropolitan Region - Supply (Ha)		10,518.0	450.0	2,579.0	13,548.0	6,972.0

[1] This total for Camden does not include 10ha of developed B5 land at Gregory Hills.

[2] This total for Camden does not include 49.6ha of undeveloped B5 land at Gregory Hills.

[3] This total does for Camden not include the total provision of 59.6ha of zoned B5 land at Gregory Hills.

*Total Sydney proposed supply includes 4,537ha of land within WSEA, 392 ha of which is located in Sydney south-west, which will increase SW region's future supply to 2,827ha.

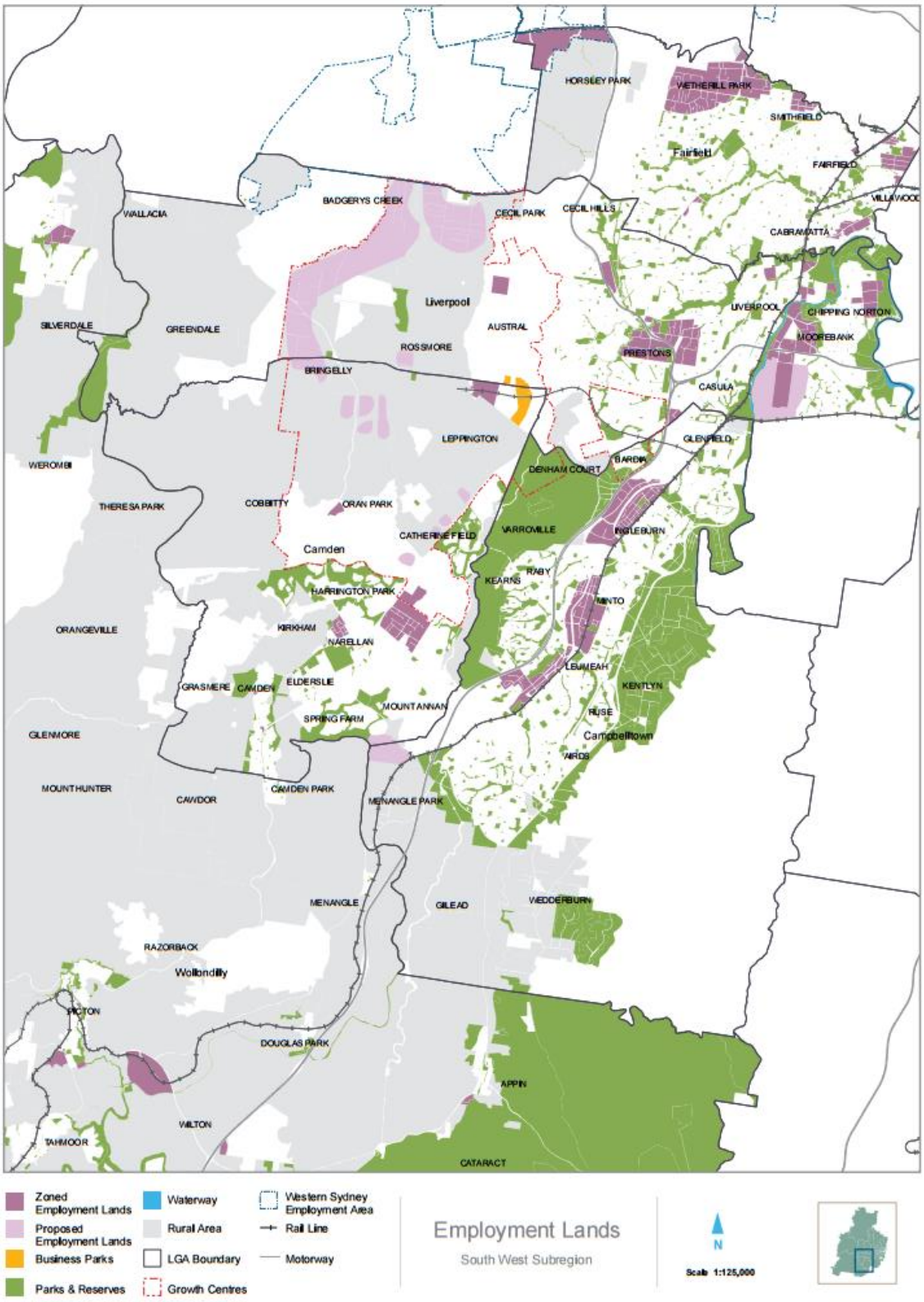
The size and status of Camden's current and proposed industrial estates and B5 land at Gregory Hills is shown below.

Table 2. Camden Industrial & B5 Estates

Precinct	Status	Total (Ha)	Proposed Supply (Ha)	Total Land Area (Ha)
Smeaton Grange	Established	199.4	0.0	199.4
Narellan	Established	34.7	0.0	34.7
Turner Road	Established	39.5	0.0	39.5
Gregory Hills (B5)	Established	59.6	0.0	59.6
Oran Park	SWGC - Zoned	18.5	0.0	18.5
Leppington North	SWGC - Zoned	70.8	0.0	70.8
Little Street & Ironbark Avenue	Established	4.1	0.0	4.1
Glen Lee	Proposed	0.0	37.6	37.6
Marylands	SWGC - Proposed	0.0	25.5	25.5
Lowes Creek/Marylands	SWGC - Proposed	0.0	63.7	63.7
Lowes Creek	SWGC - Proposed	0.0	87.7	87.7
Catherine Fields	SWGC - Proposed	0.0	87.6	87.6
Future Industrial	SWGC - Proposed	0.0	73.2	73.2
TOTALS:		**426.6**	**375.3**	**801.9**

Existing and proposed industrial land zonings relative to Camden and its surrounding areas are indicated on the following ELDP map extract. Note that B5 employment land is not identified on this map, although B7 Business Park land at North Leppington is depicted.

Figure 2. Existing and Proposed Employment Lands – Western Sydney



Source: ELDP, 2015

Section 2: Literature Review

A full literature review of current economic and employment related policies and studies relevant to Camden and South West Sydney is provided at ***Appendix A*** to this report.

Reports examined include:

- Employment Lands Development Program (2014 Update)
- Various Council planning and land use reports (including the 2015 Camden Industrial Lands Audit)
- Other local economic and employment strategies

Also included in our analysis is an examination of various metropolitan and transport-related strategies that have a specific bearing on infrastructure investment that could influence the future role of industrial land in the Camden LGA. The documents examined are:

- Sydney Canberra Corridor Regional Strategy (2006-2031)
- Maldon-Dombarton Rail Link Feasibility Study (2011)
- Final Report - Visitor Economy Taskforce (2012)
- NSW Long Term Transport Master Plan (2012)
- NSW Freight and Ports Strategy (2013)
- A Plan for Growing Sydney (2014)

All documents are considered in their chronological order.

2.1 Key Findings

The major findings from our literature review include:

- Despite its location on the south-west outskirts of the broader Sydney metropolitan area, Camden is located adjacent to the proposed Badgerys Creek airport and is strategically positioned relative to the Sydney-Canberra Corridor and is easily accessible to Port Kembla.

- The ***NSW Long Term Master Plan (2012)*** identifies a significant list of infrastructure projects that will impact on the south-west industrial land market and the role that the south-west will play in providing an employment base for broader Sydney. Major projects include:
    - The recently completed South-West Rail Link, the widening of the M5, upgrades of Camden Valley Way (partially completed and ongoing), and the Southern Sydney Freight Line.
    - The proposed and committed WestConnex (Stg 1) and the Moorebank Intermodal Terminal, and the Bringelly, Northern Road and Elizabeth Drive upgrades.
    - The longer term WestConnex (Stages 2 and 3), Badgerys Creek Airport and other freight and transport infrastructure improvements across Sydney, including the Outer Sydney Orbital (M9).
- The ***NSW Freight and Ports Strategy (2013)*** further identifies a doubling of the state's freight task by 2031 and a policy imperative to move a substantial amount of this movement to rail. The strategy anticipates that the Sydney metropolitan freight network will need to carry around 2 million TEUs, equating to an additional 35,000 additional train movements per year. In this context, the proximity of industrial land to the Moorebank Intermodal and other freight services is key.
- The current metropolitan strategy (***A Plan for Growing Sydney, 2014***), amongst other things, acknowledges the long-term potential for a major enterprise corridor between Leppington and Bringelly. This acknowledgement has been confirmed by the recent announcement of the new ***Western Sydney Priority Growth Area***.
- Current industrial and business zonings within the ***South West Growth Centre*** expectedly have a northern dimension, reflective of its proximity to new infrastructure.
- The implications of the existing and proposed ***Western Sydney Employment Area (WSEA)*** and other key planning and infrastructure projects are dealt with separately in our research and addressed in Section 4 of our report.

Section 3: Demographic and Regional Context

This section analyses the various demographic and workforce characteristics of the Camden LGA that may influence its future employment capacity.

3.1 Socio-Demographic Profile

Recent History: Population Growth 2001 to 2011

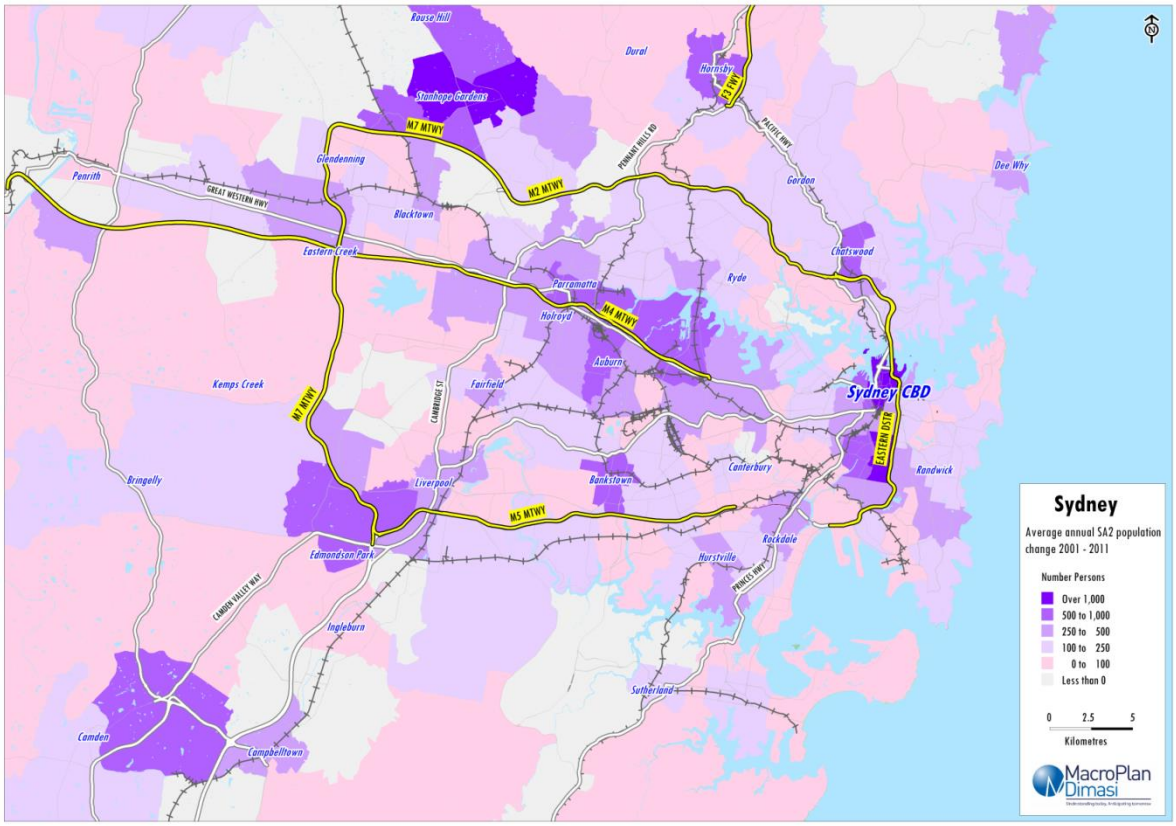
Greater Metropolitan Sydney's population increased at an annual average rate of 1.03% over the ten years to 2011. Over this period, population growth was principally supported by net overseas migration, which peaked at a record national level of more than 300,000 persons in 2008/09. The very high level of net overseas growth has been facilitated by labour shortages and rising numbers of overseas students.

During this period Camden's rate of population growth was impacted by an early out-migration of young adults and a return of first home buyer activity in the latter half of the decade.

A separate demographic trend is emerging through the rapid growth in older persons. Part of this dynamic comes from the ageing of the current resident population.

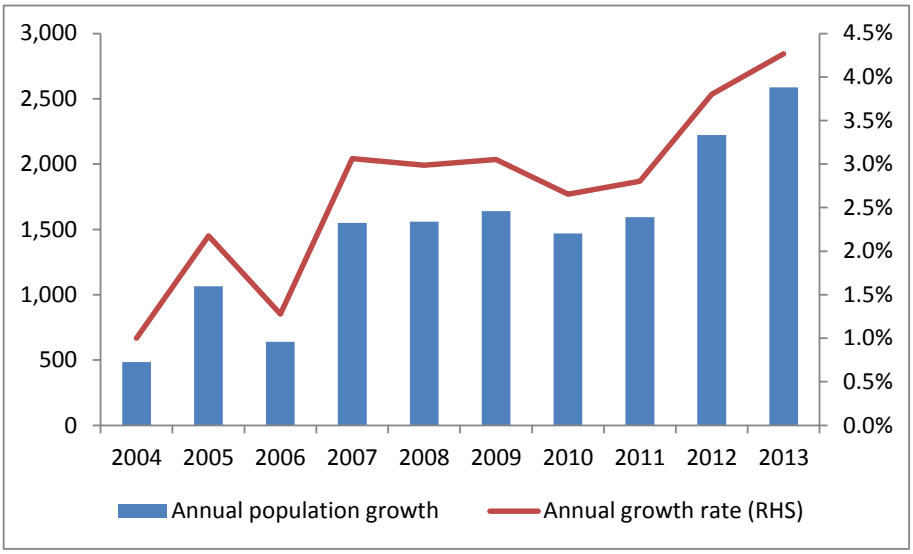
The figure below shows the distribution of population growth for the 2001 to 2011 period.

Figure 3. Actual Population Increase Per Annum (2001-2011)



Source: ABS Cat 3218.0, MacroPlan Dimasi

Figure 4. Past Population Growth – Camden LGA (2004-2013)



Source: ABS Cat. 3218.0, MacroPlan Dimasi

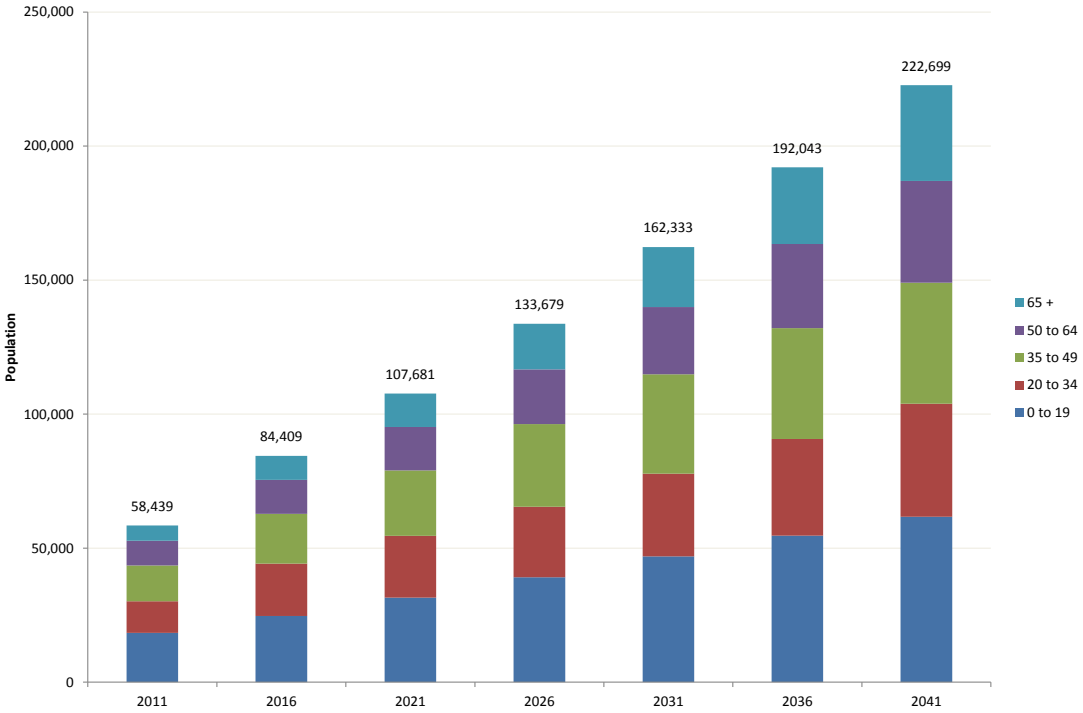
Forecast Population Growth

Forecasts for future population growth have been prepared and published by the NSW Bureau of Transport Statistics (BTS) and the Department of Planning and Environment (DP&E) which estimate the population capacity and composition within Camden to 2041. These forecasts are presented in the figure below. (Note: this figure utilises the BTS forecasts, though these are consistent with the DP&E forecasts which end at 2031)

These forecasts project an increase in the resident population from 58,439 people in 2011 to 222,699 people in 2041. This equates to an increase of 164,260 people (or 281%) over a 30 year period, or 5,475 new residents per annum.

The changing quantum and make-up of Camden's population over the forecast period is depicted below.

Figure 5. Camden Population Forecasts 2011 to 2041



Source: NSW BTS, MacroPlan Dimasi

Population by Age Characteristics

Camden currently has a relatively young population in comparison to Greater Sydney, with a higher proportion of people aged up to 49 years; and a lower proportion of people aged 50 and older.

Notwithstanding, Camden's future population will age significantly, with growth in the 65+ age cohort tipped to outstrip all other age segments to 2041.

This shift in age profile will impact on future employment capacity and needs, e.g. a higher demand for health and medical services associated with both a young and ageing population is expected.

Notably also, there will be an increase in 'working age' residents (people aged 20 to 64 years) of an estimated 74,500 people.

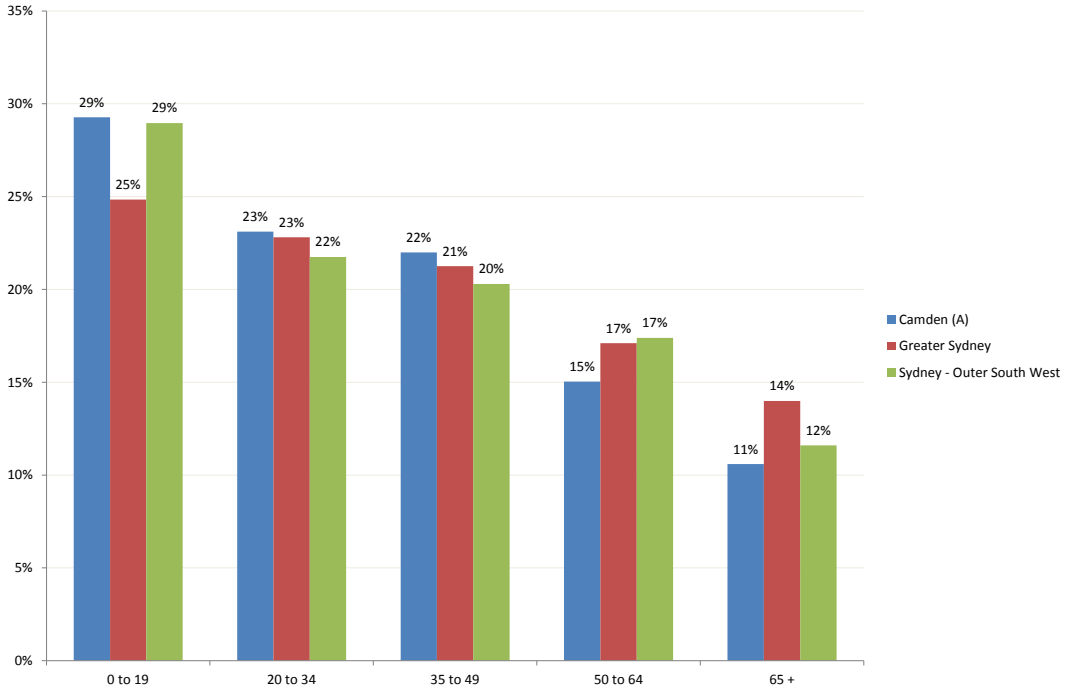
Table 3. Age Profile Change 2016-2041

	0 to 19 years	20 to 34 years	35 to 49 years	50 to 64 years	65 + years	Total
Change 2016-2041	37,024	22,612	26,605	25,275	26,774	138,290
% Change 2016-2041	150%	116%	143%	199%	299%	164%

The following graphs illustrate the changing nature of Camden's population compared to Sydney and the outer south west region. The key findings from this data include:

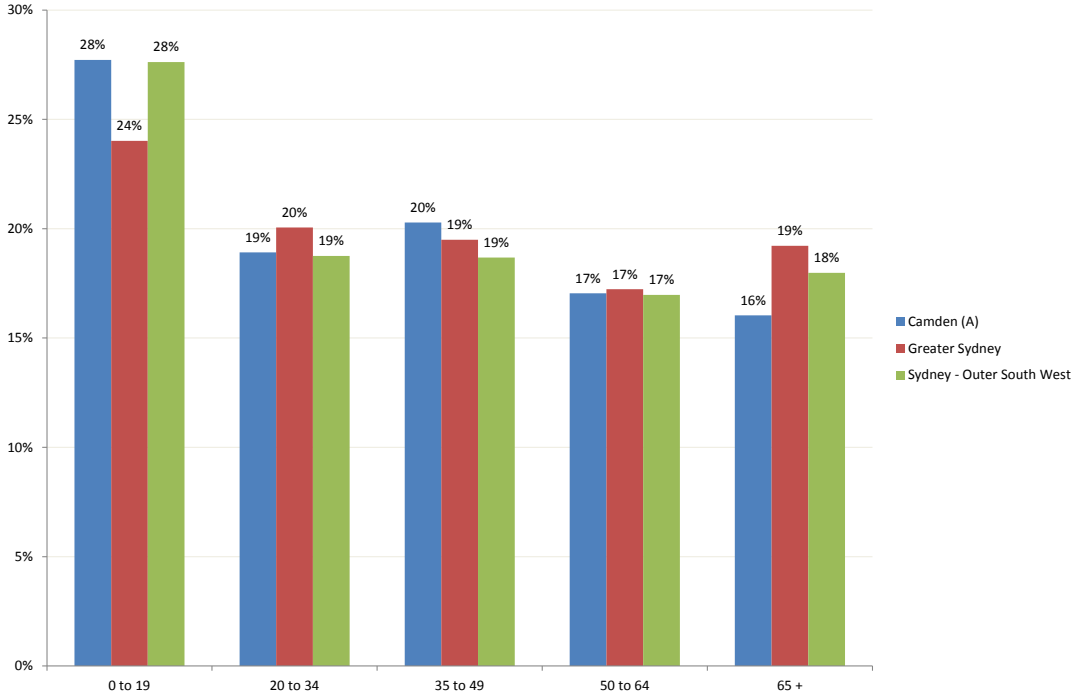
- While the entire region will experience an ageing in population, this trend will be greater in Camden;
- Even though there will be a substantial ageing of the population, Camden will continue to accommodate a comparatively young demographic with a large proportion of young families in comparison to the Greater Sydney Area;
- The significant increase in people aged 20-64 years of age will drive demand for additional employment locally.

Figure 6. Camden Population by Age - 2016



Source: NSW BTS, MacroPlan Dimasi

Figure 7. Camden Population by Age - 2036



Source: NSW BTS, MacroPlan Dimasi

3.2 Employment, Workforce and Industry Profile

Labour Force Status

The table below indicates the labour force status of Camden LGA based on the ABS 2011 Census. At 2011 Camden had a labour force of almost 30,000 people, with 1,209 people or 4.0% identified as unemployed[2].

Table 4. Camden Labour Force Status

	15-19 years	20-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Total
Employed, worked:										
Full-time(a)	596	1,785	4,473	5,239	4,505	2,418	259	16	4	**19,295**
Part-time	1,110	800	1,232	1,989	1,384	947	273	27	0	**7,762**
Employed, away from work(b)	92	88	312	231	173	163	27	5	0	**1,091**
Hours worked not stated	60	96	104	128	129	77	13	5	0	**612**
Total	1,858	2,769	6,121	7,587	6,191	3,605	572	53	4	**28,760**
Unemployed, looking for:										
Full-time work	134	142	142	104	110	72	0	0	0	**704**
Part-time work	205	58	56	82	56	43	5	0	0	**505**
Total	339	200	198	186	166	115	5	0	0	**1,209**
Total labour force	**2,197**	**2,969**	**6,319**	**7,773**	**6,357**	**3,720**	**577**	**53**	**4**	**29,969**

Source: ABS, MacroPlan Dimasi

The following table provides a breakdown of local jobs and the resident locations of the workers who occupy them. Almost half of the 16,509 local jobs are filled by worker residents of the Camden LGA.

The LGA's employment sufficiency rate (i.e. the percentage of local jobs that are filled by local workers) is 48.0%. Its self-containment rate (i.e. the percentage of local employees that work within Camden) is approximately 26.4%. We note, however, that place of work is not applicable to a large percentage of Camden's workforce, suggesting a mobile workforce that is not tied to any particular employment location. Further, we note that a substantial proportion of employment for Camden's working population is located in the adjacent south-west LGAs of Campbelltown, Liverpool, Fairfield and Wollondilly (9,188 jobs or 30%).

[2] The latest data (March 2015) indicates an improvement in Camden's unemployment rate to 2.8% or 988 people.

Table 5. Jobs in Camden – Place of Worker Residence (Employment Sufficiency)

Place of Residence	No. of Jobs	% of Camden Employees
Camden	7,925	48.0%
Campbelltown	2,963	17.9%
Wollondilly	2,544	15.4%
Liverpool	796	4.8%
Fairfield	296	1.8%
Penrith	271	1.6%
Wollongong	234	1.4%
Wingecarribee	209	1.3%
Blacktown	144	0.9%
Bankstown	135	0.8%
Sutherland Shire	119	0.7%
Blue Mountains	74	0.4%
The Hills Shire	65	0.4%
Shellharbour	56	0.3%
Hurstville	51	0.3%
Other	627	3.8%
Total	**16,509**	**100.0%**

Source: ABS, MacroPlan Dimasi

Table 6. Camden Workforce – Place of Employment (Employment Containment)

Location of Employment	People	People (%)
POW not applicable	14,201	47.4%
Camden	7,924	26.4%
Campbelltown	4,735	15.8%
Liverpool	2,722	9.1%
Sydney	1,607	5.4%
No Fixed Address (NSW)	1,204	4.0%
State/Territory undefined	1,110	3.7%
Fairfield	1,045	3.5%
Bankstown	919	3.1%
Blacktown	698	2.3%
Wollondilly	686	2.3%
Parramatta	674	2.2%
Other	77	0.3%
Total	**29,969**	**100.0%**

Source: ABS, MacroPlan Dimasi

Employment by Industry

The table below provides a comparison of employment by industry sectors. It lists the sectors that local workers work in and the number of local jobs that are available in those sectors.

The top 5 employment sectors in Camden are retail (2,544 jobs), construction (1,806), health care / social assistance (1,770), education and training (1,692) and manufacturing (1,517).

Table 7. Employment by Industry – Local employment and local jobs

Employment by Industry - Local employment vs local jobs						
	Local Employees (Employed people that live in Camden)		Local Jobs (Jobs located within Camden)		Net Employment Importation +/Exportation -	
	No.	%	No.	%	No.	%
Agriculture, forestry and fishing	298	1.0%	330	2.0%	32	10.7%
Mining	135	0.5%	34	0.2%	-101	-74.8%
Manufacturing	3,193	11.1%	1,517	9.2%	-1,676	-52.5%
Electricity, gas, water and waste services	376	1.3%	249	1.5%	-127	-33.8%
Construction	2,844	9.9%	1,806	10.9%	-1,038	-36.5%
Wholesale trade	1,517	5.3%	768	4.7%	-749	-49.4%
Retail trade	3,156	11.0%	2,544	15.4%	-612	-19.4%
Accommodation and food services	1,380	4.8%	1,200	7.3%	-180	-13.0%
Transport, postal and warehousing	2,045	7.1%	848	5.1%	-1,197	-58.5%
Information media and telecommunications	402	1.4%	111	0.7%	-291	-72.4%
Financial and insurance services	1,082	3.8%	310	1.9%	-772	-71.3%
Rental, hiring and real estate services	523	1.8%	349	2.1%	-174	-33.3%
Professional, scientific and technical services	1,434	5.0%	785	4.8%	-649	-45.3%
Administrative and support services	817	2.8%	349	2.1%	-468	-57.3%
Public administration and safety	1,922	6.7%	567	3.4%	-1,355	-70.5%
Education and training	2,664	9.3%	1,692	10.2%	-972	-36.5%
Health care and social assistance	2,811	9.8%	1,770	10.7%	-1,041	-37.0%
Arts and recreation services	382	1.3%	287	1.7%	-95	-24.9%
Other services	1,150	4.0%	806	4.9%	-344	-29.9%
Inadequately described/Not stated	627	2.2%	186	1.1%	-441	-70.3%
Total	**28,758**	100.0%	**16,508**	100.0%	**-12,250**	-42.6%

Source: ABS, MacroPlan Dimasi (2015)

The following two tables provide a more detailed account of the employment skills and characteristics of Camden's working population.

They reveal that 30% of Camden's workers are employed as managers or professionals. A further 31% occupy 'blue collar' jobs (technicians/trade,

machinery and drivers, and labourers). A further 27% are employed in personal and administrative service occupations, whilst 11% are engaged in sales.

The comparison of local employees and local jobs highlights that Camden is a net exporter of jobs/employees across all occupation categories (with the exception of agriculture, forestry and fishing), with a higher level of exportation in 'white collar' occupations including Managers, Professionals, and Clerical and administrative service workers.

Table 8. Industry of Employment & Occupation – Local workers

	Managers	Professionals	Technicians and trade workers	Community and personal service workers	Clerical and administrative service workers	Sales workers	Machinery and drivers	Labourers	Not stated	Total
Agriculture, forestry and fishing	188	5	13	0	25	7	10	50	0	298
Mining	16	10	30	0	3	0	70	3	3	135
Manufacturing	594	219	818	16	527	213	412	354	40	3,193
Electricity, gas, water and waste services	27	50	141	0	69	3	59	19	8	376
Construction	299	85	1,418	5	329	40	238	414	16	2,844
Wholesale trade	340	136	111	5	331	303	205	67	19	1,517
Retail trade	569	88	186	33	286	1,549	240	193	12	3,156
Accommodation and food services	213	18	126	387	70	252	31	276	7	1,380
Transport, postal and warehousing	231	108	121	43	483	54	875	98	32	2,045
Information media and telecommunications	75	103	88	3	50	51	11	17	4	402
Financial and insurance services	183	266	10	6	547	48	0	10	12	1,082
Rental, hiring and real estate services	61	37	21	16	155	184	22	19	8	523
Professional, scientific and technical services	137	569	179	0	469	34	11	24	11	1,434
Administrative and support services	83	114	74	72	171	17	41	240	5	817
Public administration and safety	167	256	119	728	471	28	48	78	27	1,922
Education and training	212	1,738	68	318	262	3	17	33	13	2,664
Health care and social assistance	151	1,047	95	869	497	17	30	78	27	2,811
Arts and recreation services	52	52	43	107	70	22	3	22	11	382
Other services	86	84	632	100	136	21	24	53	14	1,150
Inadequately described/Not stated	58	50	71	42	79	44	56	66	161	627
Total	**3,742**	**5,035**	**4,364**	**2,750**	**5,030**	**2,890**	**2,403**	**2,114**	**430**	**28,758**

Source: ABS, MacroPlan Dimasi

Table 9. Industry of Employment & Occupation – Local jobs

	Managers	Professionals	Technicians and trade workers	Community and personal service workers	Clerical and administrative service workers	Sales workers	Machinery and drivers	Labourers	Not stated	Total
Agriculture, forestry and fishing	193	8	15	0	19	3	14	78	0	330
Mining	6	10	4	0	3	0	11	0	0	34
Manufacturing	247	74	520	7	198	60	231	167	13	1,517
Electricity, gas, water and waste services	14	10	129	0	14	3	56	23	0	249
Construction	185	54	812	0	290	50	186	221	8	1,806
Wholesale trade	161	32	57	0	171	165	134	37	11	768
Retail trade	349	45	153	34	171	1,216	334	234	8	2,544
Accommodation and food services	151	3	136	334	28	226	31	288	3	1,200
Transport, postal and warehousing	79	22	32	4	203	17	470	13	8	848
Information media and telecommunications	19	22	14	0	11	35	3	7	0	111
Financial and insurance services	47	94	0	0	156	6	0	4	3	310
Rental, hiring and real estate services	39	18	15	4	85	144	21	20	3	349
Professional, scientific and technical services	58	343	100	0	251	14	6	8	5	785
Administrative and support services	21	28	37	45	54	0	14	150	0	349
Public administration and safety	32	103	48	160	118	8	39	53	6	567
Education and training	105	1,092	49	249	158	0	6	27	6	1,692
Health care and social assistance	69	556	61	731	251	5	14	72	11	1,770
Arts and recreation services	28	36	54	96	38	12	0	19	4	287
Other services	40	51	431	101	94	7	25	53	4	806
Inadequately described/Not stated	23	21	22	18	45	14	10	22	11	186
Total	**1,866**	**2,622**	**2,689**	**1,783**	**2,358**	**1,985**	**1,605**	**1,496**	**104**	**16,508**

Source: ABS, MacroPlan Dimasi

3.4 Key Findings

The key findings arising from our analysis of demographic and employment data are:

- Camden is a net exporter of jobs/employees with approximately 12,250 or 42.6% of local jobs demand being provided for outside of the Camden LGA.
- While the ageing population within Camden will reduce the workforce as a proportion of the total population, there will still be significant growth in the number of people entering the workforce and therefore growth in employment demand.
- Camden's workforce skills are relatively evenly distributed between white and blue collar and other sectors.
- When the occupation of employment is considered, however, Camden has a lower proportion of white collar employment opportunity and a slightly higher proportion of blue collar employment.
- The south-west region contributes substantially to accommodating the employment requirements of Camden's workforce. Over 9,000 of Camden's working residents are employed at the neighbouring LGAs of Campbelltown, Liverpool, Fairfield and Wollondilly.
- Coupled with jobs located in other Western Sydney locations (Bankstown, Blacktown and Parramatta) more than 11,400 jobs are provided for across south-western and western Sydney, in addition to the 7,900 jobs that working residents occupy in Camden itself.
- There is an overwhelming regional flavour to Camden's employment characteristics, emphasising the interrelationship between employment land supplies across LGA boundaries.

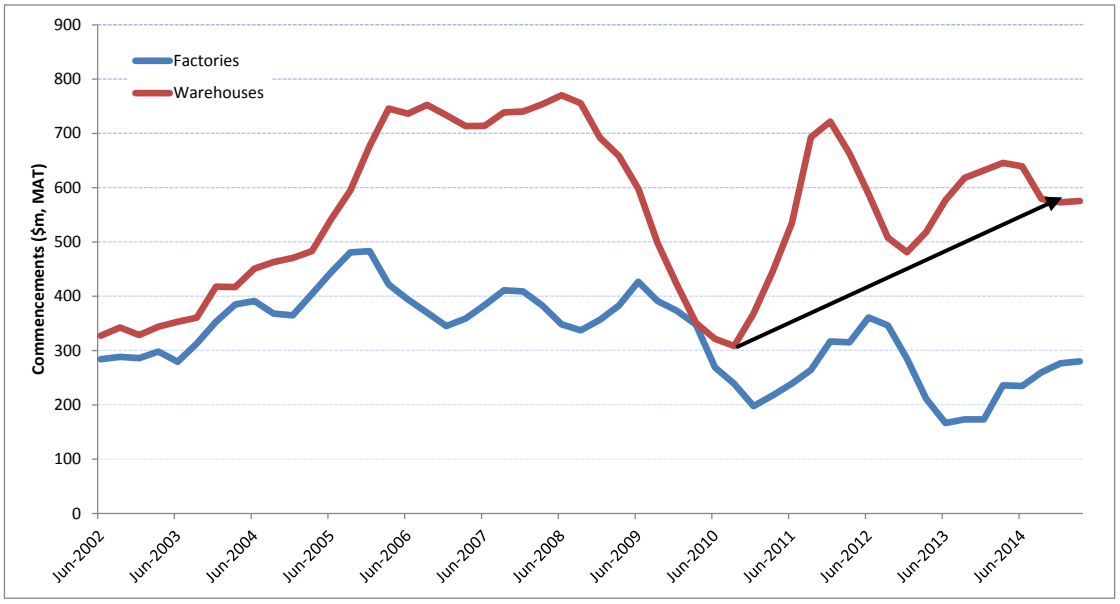
Section 4: Development Trends and Drivers

This section considers those development and market trends and infrastructure projects (current and proposed) that have influenced the rate of industrial development in western and south-western Sydney and are expected to continue to influence Camden's industrial land supply needs.

4.1 Industrial Commencements and Take-Up Rates

Since the Global Financial Crisis the combined pipeline of warehousing development projects across New South Wales has recovered. From a value perspective, however, annual factory and warehouse starts, being almost equal at around $300 million in 2002 are now almost $300 million per annum apart. Clearly, warehouse development has become more dominant.

Figure 8. Warehouse & Factory Commencements ($, MAT), NSW (2002-2015)



** NB: MAT – Moving Annual Total*

Source: Australian Bureau of Statistics (2015)

Changes in the management of supply chains and industry 'consolidation' have contributed to demand for new warehouse facilities that can deliver greater

efficiencies and accommodate multiple business functions at a strategic or accessible location.

As such, the need to have an extensive distribution and warehouse node network throughout Sydney has diminished. In fact, market forces are coercing many existing industrial and warehousing operators into more streamlined supply-chain networks. Slimmer inventory management practices have reduced the demand for industrial floorspace, particular at more expensive node locations in established industrial precincts.

Ultimately, the goal of consolidation is to limit the time that products remain in storage, and ultimately the degree of handling. Logistics operators aim at constant improvement in warehouse through-put, which requires the latest in terms of storage and movement technology, as well as larger, taller warehouses, cross-docking facilities and well-positioned locations that can effectively limit the amount of handling.

Consolidation of fragmented premises offers operators the opportunity to extract time and cost savings from operations, whether in the form of a reduced employee head count (consolidation of overlapping business functions), centralised logistics & infrastructure utilisation, co-location with wholesale trading partners, the opportunity to customise premises or simply through cheaper rental rates.

As a result, many industrial businesses have occupied industrial premises in outer western Sydney in the past ten years[3]. Rising rents in established industrial regions has provided the impetus for this movement. The provision of newer, larger and more suitable industrial sites in western Sydney has also assisted in enticing businesses out to western Sydney, to new locations near the M4, M7, M5 and major networks where better logistics exist for reducing operating costs.

This movement has also been facilitated by significant investment in road and freight infrastructure, with the Sydney Orbital Road Network (the M7)

[3] Some examples include Linfox, Toll Express, DHL, and major distribution centres for Coca Cola Amatil, Coles, Arnotts, Woolworths & Myers.

representing the pivotal infrastructure item. Accordingly, businesses that operate in the logistics, warehouse and distribution industry have relocated to this area.

Industrial development has been most pronounced at the intersection of the M4 and M7. More recently, the industrial development fronts at the M5 and M7 intersection has gathered momentum, where more affordable industrial land is available.

The gravitation to the M7 is evidenced by recent building activity figures. Over the five years to March 2014, approximately 970,100m^2 of new industrial space, was commenced in Greater Sydney. Of the total, Eastern Creek accounted for the majority of this activity, with industrial commencements of 457,600m^2. Erskine Park (192,800m^2) and Prestons (116,900m^2) represented the next two most popular destinations.

The pattern and extent of new industrial development across western Sydney is depicted in the following table and image.

Table 10. Industrial Building Starts (FY2009-FY2013 cumulative)*

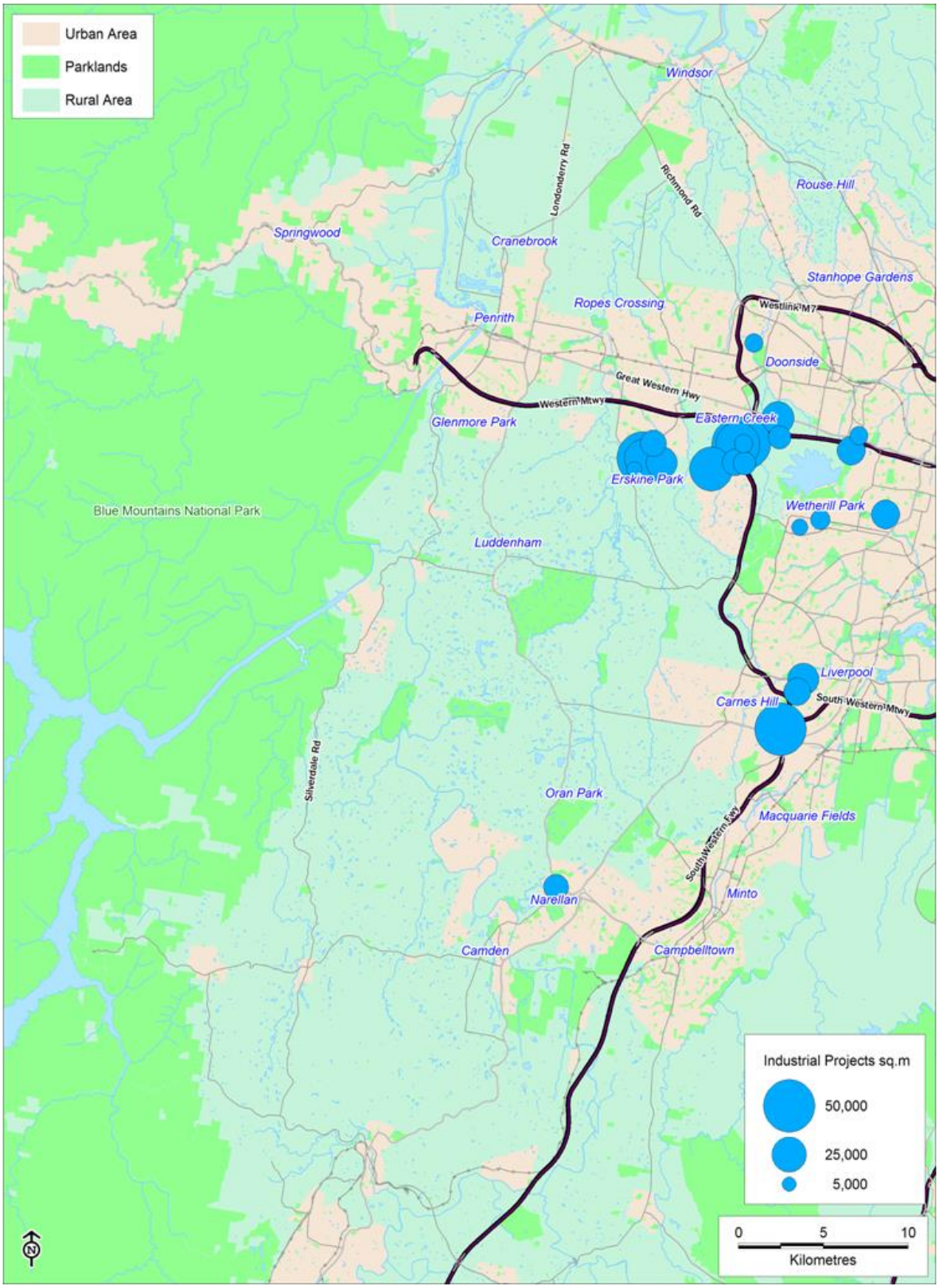
Suburb	LGA	Net additions (m^2)
Eastern Creek	Blacktown	457,600
Erskine Park	Penrith	192,800
Prestons	Liverpool	116,900
Smithfield	Fairfield	38,400
Wetherill Park	Fairfield	36,500
Glendenning	Blacktown	19,600
Greystanes	Holroyd	18,400
Bankstown	Bankstown	17,900
Narellan	Camden	16,900
Castle Hill	The Hills Shire	16,200
Prospect	Blacktown	8,500
St Marys	Penrith	7,200
Penrith	Penrith	5,400
Minto	Campbelltown	5,000
Ingleburn	Campbelltown	4,800
Moorebank	Liverpool	4,000
Milperra	Bankstown	2,500
Hoxton Park	Liverpool	1,500
Total		**970,100**

Source: Cordell Connect, ABS custom data, MacroPlan Dimasi (2014)

**ABS data discontinued as at June 2011*

**FY2012 and FY2013 commencement data derived from Cordell Connect*

Figure 9. Industrial Commencements by Floorspace (m^2), 2008/09 to 2011/13



Source: Cordell Connect, ABS Custom Data, MacroPlan Dimasi

A related driver has been the release of new industrial land adjoined to the M7 motorway. This land has enabled the provision of large industrial building formats, facilitating delivery of customised and tailored product to the market. In addition, the scale and accessibility presented by these locations, has permitted operators to reduce costs through the streamlining and consolidation of distribution networks.

This has been evidenced by superior employment land take up in the West Central and South West subregions[4], driven by activity in key locations adjacent to infrastructure.

Table 11. Average Annual Take-up of Industrial Land (January 2008 – January 2014)

Subregion	LGA	Precinct	Take-up (Ha)							
			2008	2009	2010	2011	2012	2013	2014	Total
Central	Randwick	Port Botany	1.3	5.3	0.1	0.5				11.1
South	Sutherland	Kurnell	1.8	22.4	0.2			0.9		25.3
South West	Camden	Smeaton Grange	19.6	3.3	9.0	0.7			20.5	53.1
	Campbelltown	Campbelltown, Blaxland Road					15.1	3.7	9.4	28.2
	Campbelltown	Ingleburn	14.9	4.8	0.3	0.4		4.2	5.0	29.5
	Campbelltown	Minto	3.4	0.5	6.1	0.5				10.5
	Fairfield	South of Sydney Water Pipeline				10.0				10.0
	Fairfield	Wetherill Park	12.2	6.2				2.7		21.2
	Liverpool	Hoxton Park			38.1					38.1
	Liverpool	Yarunga/Prestons	15.6	22.5	5.3	1.4		10.1	4.9	59.8
West	Penrith	Erskine Park	28.3	50.6		19.9	30.7	8.9	18.7	157.2
	Penrith	North Penrith	0.9	7.2	4.3	0.4		7.0	0.3	20.1
West Central	Auburn	Chullora	2.0	0.3	0.1	5.1		4.0		11.4
	Auburn	Regents Park	8.8	1.4	1.2	0.8		0.2		12.4
	Blacktown	Blacktown Rd, St Martins						5.4		5.4
	Blacktown	Eastern Creek	25.5	4.3	11.4	32.3		18.5	22.8	114.9
	Blacktown	Former Wonderland	0.0	9.5		10.7		25.8		46.0
	Blacktown	Glendenning	10.4	5.7	0.2	0.8		2.2	16.8	36.0
	Blacktown	Huntingwood West				18.8		26.7	7.9	53.4
	Blacktown	Marsden Park					16.7			16.7
	Blacktown	Minchinbury	6.5							6.5
	Blacktown	Ropes Crossing		10.5						10.5
	Blacktown	Seven Hills (Blacktown LGA)	7.9	3.0	0.4	0.1		0.4		11.8
	Holroyd	Greystanes			16.8		7.1	22.3	1.4	47.6
	Parramatta	Rydalmere						8.3		8.3
	The Hills	Annangrove			6.0					6.0
		Sydney Metropolitan Region Total (all precincts)	**264.0**	**205.0**	**118.6**	**117.1**	**123.1**	**190.3**	**120.6**	**1,138.8**

Source: NSW Planning & Infrastructure ELDP (2015)

Another key factor for businesses opting for a less-centralised location is the trade-off between travel time, property values, rents and more generally,

[4] NSW Planning & Infrastructure (2015), Employment Lands Development Program (Update Report)

accessibility. Suburbs closer to inner Sydney have significantly higher land values than the Outer West[5]. As such, there has been an outflow of industrial tenants to Western Sydney, supported by land values, rents and new infrastructure.

Table 12. Sydney Industrial Market Indicators as at April 2015

Precinct	Avg Prime Rent		Avg Secondary Rent		Core Market Yields		Avg Land Values <5,000m²		1 - 5 ha	
	$/m² net	(%p.a)	$/m²	(%p.a)	Prime	Secondary	$/m²	(%p.a)	$/m²	(%p.a)
Outer West	107	2.2%	93	0.0%	7.00 - 8.00	8.00 - 8.75	370	4.4%	315	13.5%
Inner/Central West	121	2.7%	103	1.2%	7.25 - 8.00	8.25 - 9.00	541	4.7%	346	12.1%
South West	98	2.6%	82	0.0%	7.25 - 8.00	8.25 - 9.25	325	3.3%	240	6.9%
North	163	2.1%	135	0.9%	8.00 - 8.75	8.75 - 9.25	620	4.6%	500	3.6%
South	151	2.5%	126	1.3%	6.50 - 7.25	7.50 - 8.25	1,263	12.8%	975	13.0%
Sydney Average	**128**	**2.4%**	**108**	**0.7%**	**7.00 - 8.00**	**8.25 - 9.00**	**412***	**4.1%***	**300***	**10.9%***

Source: Knight Frank (2015)

**Average Outer West, Inner Central West and South West*

4.2 Regional Context – Key Plans & Infrastructure Projects

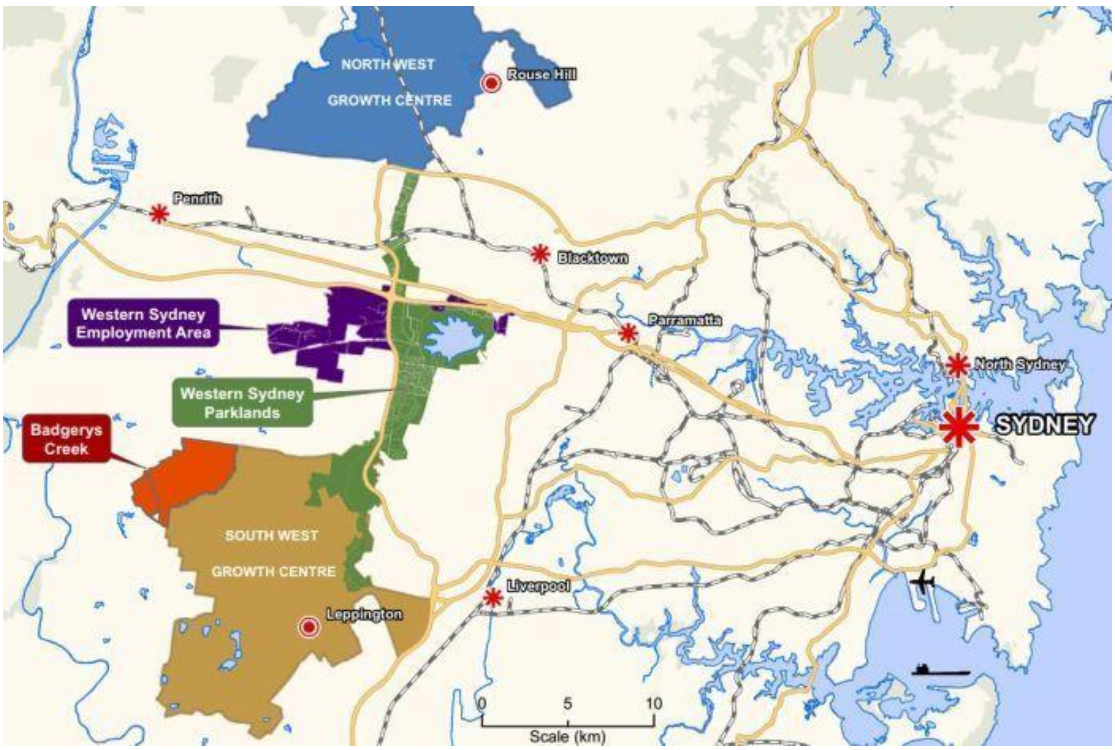
As discussed above, significant investment and planned investment in road and freight infrastructure has facilitated the gravitation of new industrial development to western Sydney.

Further planned infrastructure projects and major development fronts are expected to continue to exert a strong influence on the progress and development of employment lands in Western Sydney. These projects will impact on the attractiveness and relevance of the Camden LGA to generate industrial and related employment activity. The projects include:

- Badgerys Creek Airport
- Western Sydney Employment Area
- Western Sydney Priority Growth Area
- Major road upgrades
- Moorebank IMT
- South West Rail Corridor (and proposed extensions thereto)

[5] Outer West comprises of North West and South West ELDP regions

Figure 10. Badgerys Creek Airport - Regional Context Map



Source: Department of Infrastructure and Regional Development (2014)

Badgerys Creek was confirmed in April 2014 by the Commonwealth Government as the site for Sydney's second airport[6]. The airport abuts the proposed expansion of the Western Sydney Employment Area (WSEA) and will serve as a catalyst for investment and job creation in the region[7].

The draft EIS[8] for the Badgerys Creek Airport outlines a construction program that is designed to cater for ongoing growth in travel demand, involving:

- *Stage 1 & 2 – catering for 10m passengers annually and freight traffic for 5 years following opening around 2025 until around 2030, with additional infrastructure to add capacity beyond this period.*
- *Long term potential – dependent upon a second parallel runway triggered when operational capacity approaches 37m annual passengers which is forecast by around 2050, with a longer term capacity to cater for up to 82m passengers by 2063.*

[6] https://www.pm.gov.au/media/2014-04-15/western-sydney-airport-deliver-jobs-and-infrastructure

[7] Department of Infrastructure and Regional Development (2014) – The Benefits of an Airport at Badgerys Creek

[8] Western Sydney Airport, Environmental Impact Statement, Volume 1, October 2015

The EIS estimates the generation of 8,730 direct jobs at the airport by 2031, expanding to a potential 61,500 direct jobs at the airport site by 2063.

A proposed expansion of the **Western Sydney Employment Area** will provide for an additional 4,600ha of land for employment purposes in Western Sydney. The Broader WSEA will comprise a total of over 10,000ha and include portions of land in the LGAs of Blacktown, Fairfield, Liverpool and Penrith.

The Broader WSEA is equivalent to the area from Parramatta to Liverpool or Sydney CBD to Kingsford Smith Airport.

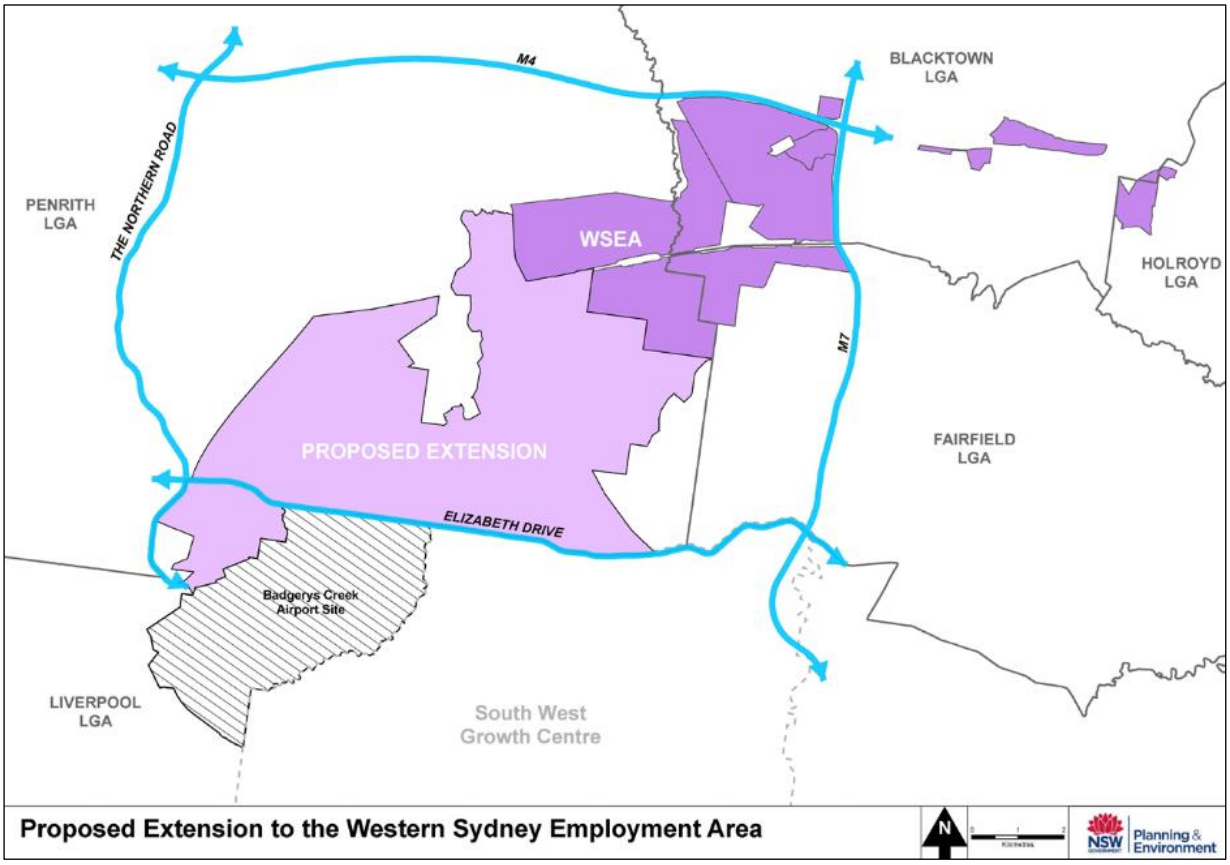
The recent announcement of a new Sydney Airport at Badgerys Creek means that the Broader WSEA will deliver more than the originally anticipated 57,000 jobs over 30 years (including 36,000 industrial jobs and 21,000 office jobs) and more than the anticipated 212,000 longer term jobs.

Current plans are being revised to account for the Badgerys Creek airport. As part of this revision, the WSEA boundary has been extended south to Elizabeth Drive and includes land west of the airport site. State Environmental Planning Policy (SEPP) – Western Sydney Employment Area has been amended to include the new area.

Notably, the WSEA SEPP amendment does not rezone land for employment uses. Existing land use zones continue to apply until specific rezoning occurs. Further planning is being undertaken to identify land use suitability and the infrastructure requirements necessary to service future development.

A further revised Structure Plan for WSEA is expected to be exhibited toward the end of 2015.

Figure 11. Proposed extension to the Western Sydney Employment Area

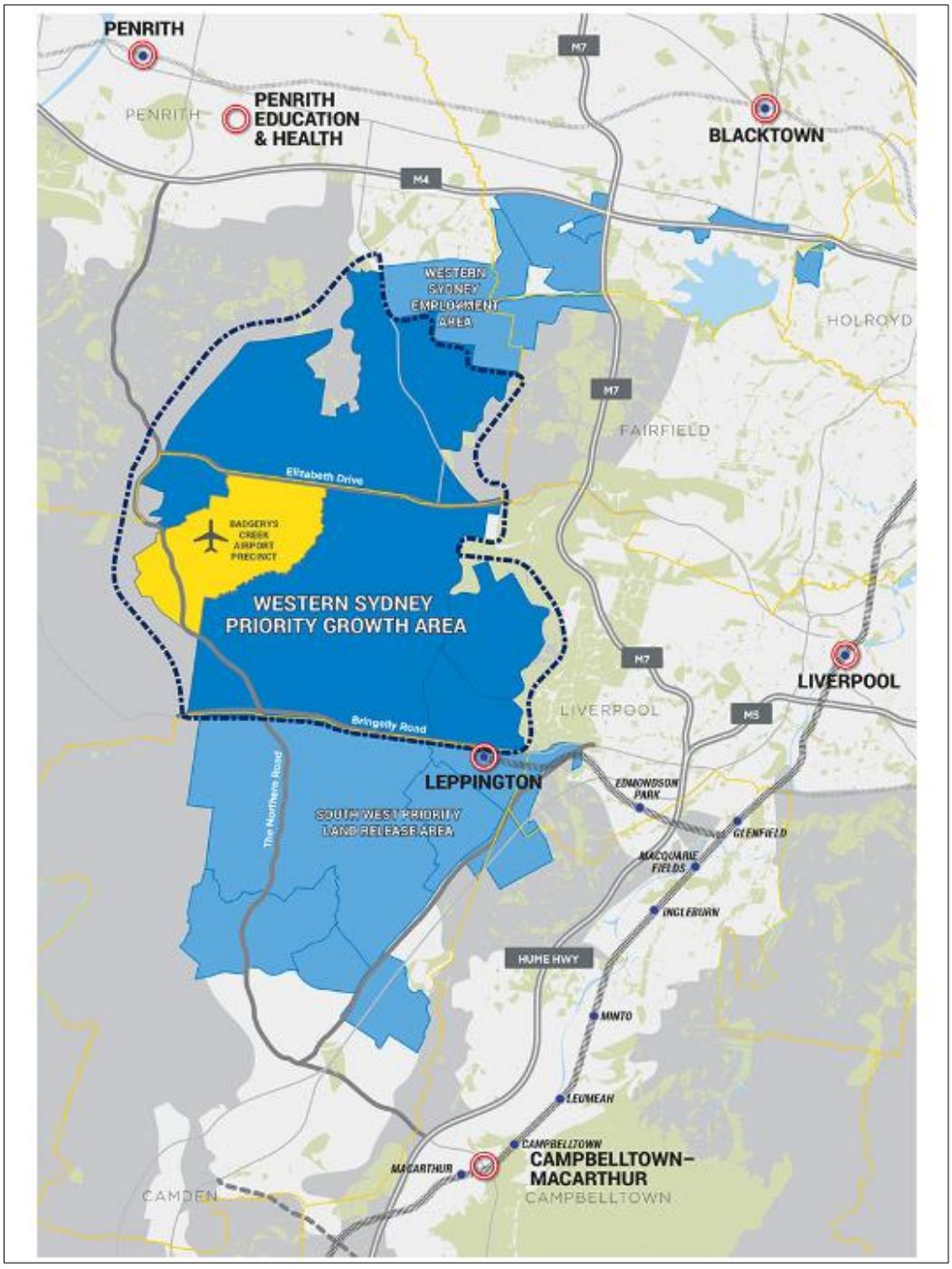


Source: Department of Planning and Environment (2014)

Further, as part of its investigations to create opportunities for new jobs, homes and services around the planned Badgerys Creek Airport in Sydney's west, the NSW Government has recently announced the new **Western Sydney Priority Growth Area,** which encompasses and expands the WSEA investigation area.

A draft Land Use and Infrastructure Strategy will be prepared to guide new infrastructure investment, identify new homes and jobs close to transport, and coordinate services in the area. The strategy will consider how new suburbs are connected with the planned second Sydney airport and the regional cities of Penrith and Liverpool and will include planning and funding of essential infrastructure and services.

Figure 12. Recently announced Western Sydney Priority Growth Area



Source: NSW Department of Planning and Environment (2015)

The Western Sydney Priority Growth Area will also benefit from the $3.6 billion road investment program, the extension of the South West Rail Link from Leppington to St Marys, and the Outer Sydney Orbital.

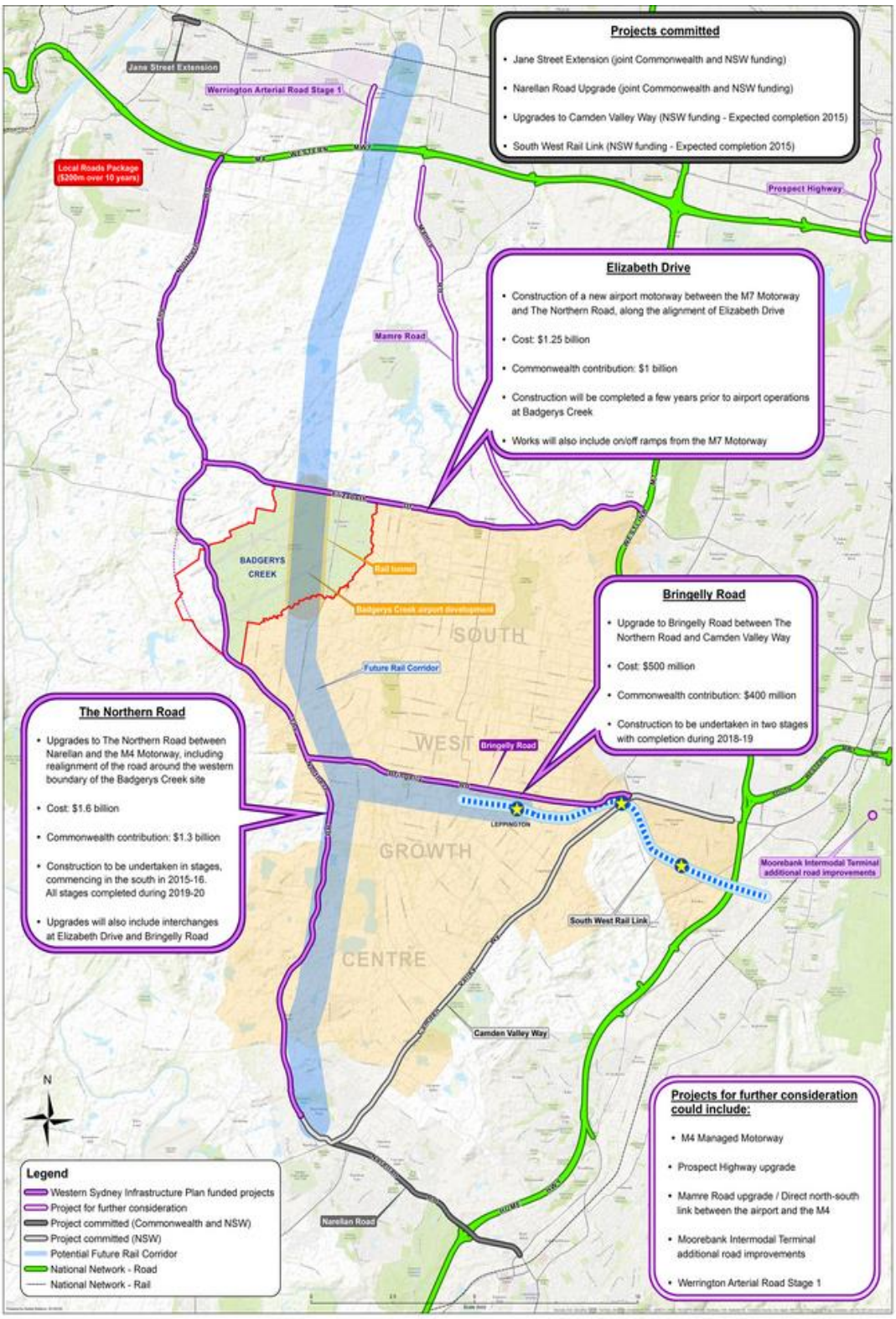
In conjunction with the airport announcement, the Commonwealth and NSW Governments have committed to a **Western Sydney Infrastructure Plan**.

Augmented by the State Infrastructure Strategy (2014) and more recent budget announcements, the plan provides a focus on investing in road and transport links that support the development of the Badgerys Creek airport.

Through joint funding, the plan will deliver upgrades to major and local roads including:

- **Bringelly Road** – upgrade to four lanes from Camden Valley Way to the Northern Road.
- **The Northern Road** – upgrade to a minimum of four lanes from Narellan to M4 Motorway.
- **Elizabeth Drive Corridor** – construction of a new four-lane motorway from the M7 Motorway to the Northern Road
- **Local roads** – an additional $200 million for local road upgrades.

Figure 13. Western Sydney Infrastructure Plan Road Upgrades (2014)



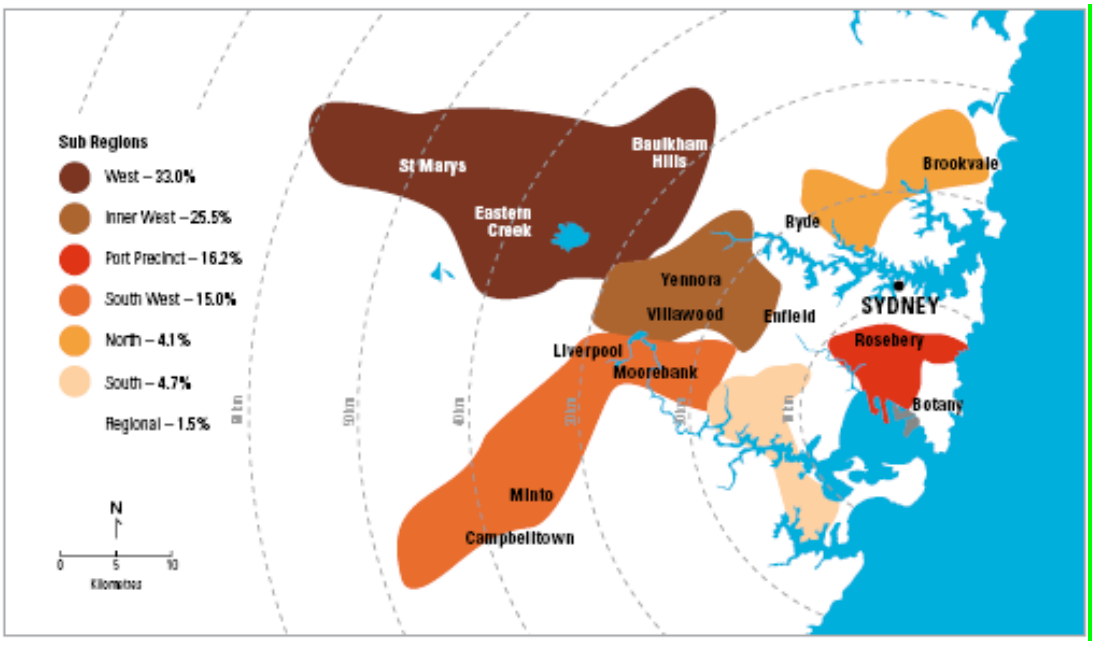
Source: Department of Infrastructure and Regional Development (2014)

The development of Sydney's second airport and corresponding investment in supporting road infrastructure will reinforce Western Sydney's standing as a preferred location for industrial development and freight and logistics operations.

Over the past decade, road transport has come to dominate the movement of freight from Port Botany in the absence of additional rail freight capacity. Whilst the distribution of access points for Port Botany have been skewed in the past to north western Sydney, construction of the M7 has altered the nature of the main distribution networks along the M4. As a result, development has concentrated around the intersection of the M4 and the M7.

More recently, investment in the M5 has also supported industrial development at the intersection of the M5 and M7 (i.e. at Prestons and Hoxton Park).

Figure 14. Sydney Metro - Import Destinations (% of volume transported)



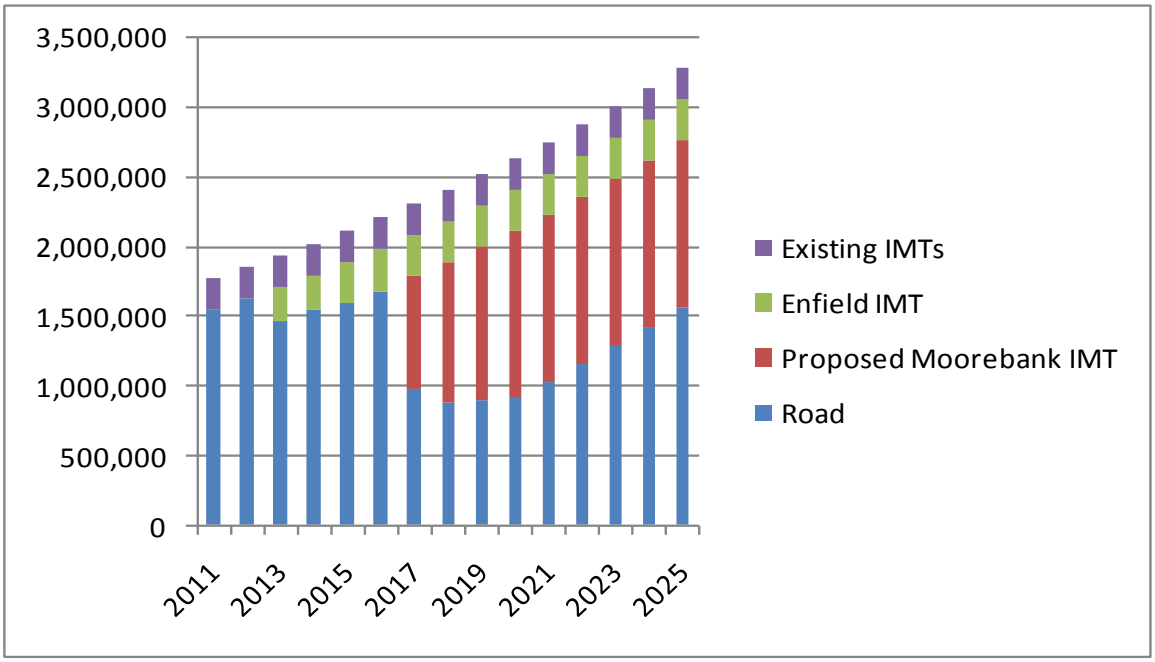
Source: Sydney Ports Corporation (2012)

Unlike a number of other Australian cities, Sydney is predominantly a net importer of containerised freight. Currently, the Sydney container freight market is almost entirely dependent on Port Botany which is one of state's key container port facilities. The rail freight network currently provides for only a small proportion of total import and export volumes through Port Botany.

The **Moorebank Intermodal Terminal** (IMT), located in the Liverpool LGA, south of the M5 Motorway at Moorebank, is intended to accommodate a greater reliance on rail for the movement of goods to and from Port Botany. It will handle 1.05m import-export (IMEX) shipping containers per annum & up to 500,000 interstate shipping containers and will link directly with Port Botany via the recently upgraded Southern Sydney Freight Line.

At this stage the Commonwealth Government and the Sydney Inter-Modal Terminal Alliance (SIMTA) have signed contracts that require SIMTA (comprising both Qube & Aurizon Holdings) to develop and operate the facility. Planning approval for the facility, however, is yet to be granted. Notwithstanding, construction of the first stage of the project is expected to begin in late 2017 with the first stage of operation to begin in late 2017.

Figure 15. Projected TEU Movements from Port Botany (2011-2025)



Source: Sydney Ports Corporation (2012)

The range of freight being transported along the road network is set to drop sharply as the Moorebank IMT begins operation. Based on these projections, the volume of road freight would not recover to current levels until beyond 2025.

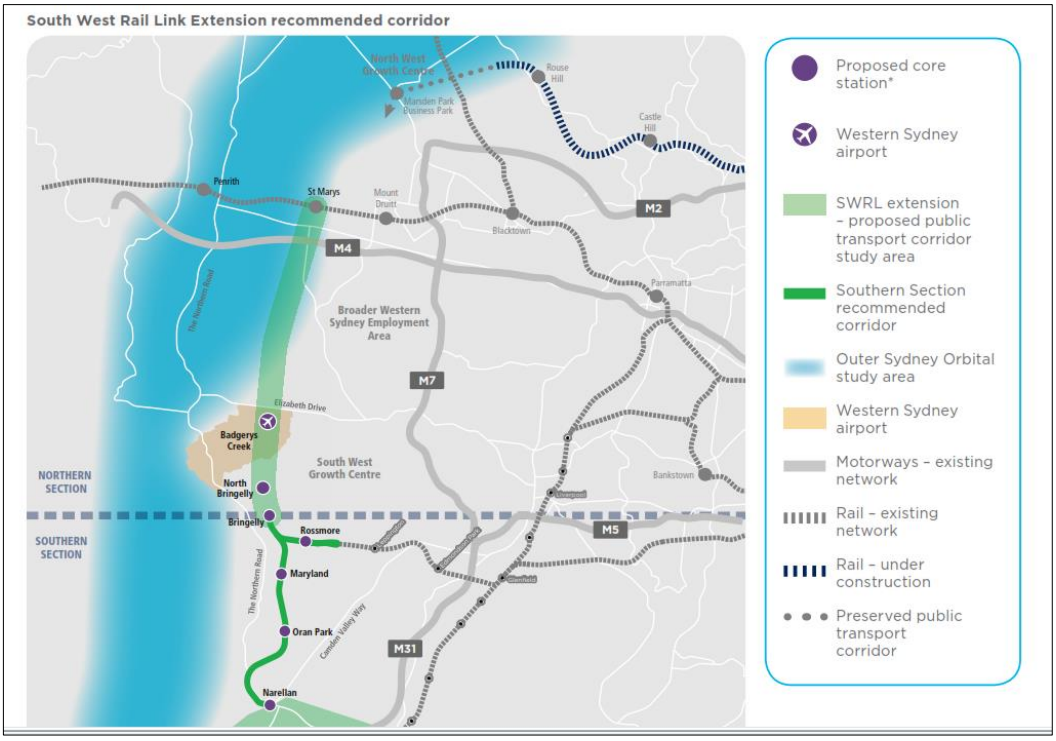
In the short term, however, road freight will continue as the main mode for distribution and logistics of containerised goods. This will continue to support demand for warehouse and distribution facilities at locations proximate to the M4/M7 and M5/M7 intersections. The proposed Outer Sydney Orbital Road (M9) will further reinforce the importance of the city's orbital road networks.

Transport for NSW has recently exhibited a proposed corridor reservation to accommodate an extension to the recently completed **South West Rail Link**. A potential passenger rail corridor is anticipated to follow a north-south alignment from Leppington through Badgerys Creek and on to St Marys. A further southern spur is anticipated to link from Bringelly to Narellan, providing passenger services for the southern extremities of the South West Growth Centre.

The South West Rail Link extension will:

- Provide direct access to the airport at Badgerys Creek and to WSEA.
- Facilitate linkages between the South West and North West Growth Corridors.

Figure 16. South West Rail Link Extension – Potential Corridor Reservation



Source: Transport for NSWDP & E (2014)

4.3 Industrial Development Outlook

Over the 5 to 10 year horizon, new transport infrastructure promises to have a substantial impact on the distribution and activation of industrial development fronts, e.g. the development of the proposed intermodal facilities at Moorebank is expected to substantially influence the pattern of future industrial development across the central-western and south-western regions.

In an environment of slower land take-up, the impact of the Moorebank IMT becomes the primary determinant for long-term locational strategies.

The Moorebank IMT will provide an efficient solution for improved movement of container freight between Port Botany and south-west Sydney. Consequently, the centre of gravity for industrial development should continue to move away from the M4 and M7 intersection, down the M7 and potentially to the west of the M7 i.e. between The Northern Road and the M7.

The planned widening of The Northern Road is also a potential catalyst for industrial development in the region, as it also facilitates direct access to the north-west resident population market. Suitable precincts in Kemps Creek, West Hoxton and Badgerys Creek are expected to emerge.

Locations to the west of the M7 can be activated by Elizabeth Drive. This movement would be quite efficient from the Moorebank IMT site, promoting access to Kemps Creek, Badgerys Creek and Luddenham.

In the longer term, further major infrastructure investment will ultimately determine the direction and magnitude of demand for industrial space in Sydney.

The M9 or Outer Sydney Orbital Road will be pivotal, as it can potentially activate employment precincts outside Sydney's designated growth centres i.e. in the Wollondilly and Wingecarribee LGAs.

4.4 Key Findings

Key findings arising from our analysis of the major factors influencing the location of industrial development across Sydney include:

- The changing nature of industrial development across western and south-western Sydney, with warehousing projects dominant.
- The expected continuation of influence exerted by key infrastructure projects including Badgerys Creek Airport, the Moorebank Intermodal and new freight and passenger rail connections, supported by the planned expansion of the Western Sydney Employment Area (WSEA).
- The broader WSEA alone is planned to accommodate almost one-quarter of all industrial land in Sydney by the time it is delivered to market. It and new land proposed to be zoned within the South West Growth Centre are anticipated to be the major new sources of supply.
- Overall industrial land stocks for Sydney are identified below. South-West and West Sydney (WSEA) dominate intended future supply sources.

Table 13. Employment Land Summary - Sydney

Subregion	Total Stock (ha)	Developed industrial zoned land (ha)	Undeveloped and serviced industrial zoned land (ha)	Undeveloped and unserviced industrial zoned land (ha)	Industrial land lost to rezoning (ha)	Industrial land gained to rezoning (ha)	Proposed industrial land (ha)
Central	1,444.4	1,383.1	13.6	47.7	1.5		
North	566.8	523.8	25.5	17.6		10.8	
South	897.8	785.3	0.5	111.9			
South West	3,396.6	2,685.6	181.3	529.6		66.0	2,827.3
West	1,786.7	1,065.2	100.7	620.8		2.4	4,145.2
West Central	5,455.9	4,075.8	128.3	1,251.9			
Sydney Metropolitan Region Total	13,548.2	10,518.7	449.9	2,579.5	1.5	79.2	6,972.5

Source: NSW Planning & Infrastructure ELDP (2015)

Section 5: Employment Demand and Forecasts

Employment and sectoral growth will form the basis of Camden's future industrial demand. In this section, we review and test employment forecasts produced by the NSW Bureau of Transport Statistics (BTS) and translate anticipated growth into industrial floorspace demand.

5.1 Employment Demand Overview

Our employment forecasting considers the scale and mix of employment that is expected to be created through planned development across South West Sydney. While population growth will ultimately determine the scale of employment demand within the region, infrastructure investment will impact the type and location of such employment opportunity.

The table below provides an example of the type of employment likely to be created from this major infrastructure and project investment. It provides an estimate of employment forecast for Badgerys Creek airport, as presented in the Deloitte Access Economics report *Economic Impact of a Western Sydney Airport*.

Table 14. Badgerys Creek Airport – Estimated Employment Impacts, 2040 (Onsite & Offsite)

Industry Sector	Location of Employment			Total Employment
	Airport Precinct	External Employment - Camden	External Employment - Balance Areas	
Accommodation and Food Services	700	140	1,260	2,100
Financial and Insurance Services	0	245	2,205	2,450
Health Care and Social Assistance	0	245	2,205	2,450
Manufacturing	0	165	385	550
Professional, Scientific and Technical Services	0	350	1,400	1,750
Public Administration and Safety	700	140	560	1,400
Rental, Hiring and Real Estate Services	1,250	175	1,575	3,000
Retail Trade	1,250	280	1,120	2,650
Transport, Postal and Warehousing	2,100	855	1,995	4,950
Wholesale Trade	1,250	1,500	3,500	6,250
Total	**7,250**	**4,095**	**16,205**	**27,550**

Source: Deloitte Access Economics, MacroPlan Dimasi

The Badgerys Creek Airport is expected to generate an estimated 27,550 jobs at 2040 including 7,250 within the airport precinct and an additional 20,300 jobs

external to the airport precinct. MacroPlan Dimasi estimates that Camden will capture approximately 4,095 of these external jobs based on its employment land capacities and locational advantages in relation to the airport (note that this estimate is not derived from the BTS forecast, though the BTS forecasts consider similar conditions).

We note that the recent Western Sydney Airport Draft Environmental Impact Statement[9] suggests that 8,730 direct jobs will be created by the airport in 2031 and that, over the longer term to 2063, when the airport operates to accommodate around 82 million passengers per year, it will deliver 61,500 direct jobs. These projections are not dissimilar to those provided earlier by Deloitte Access Economics.

Many of the expected direct, and indirect, jobs will be located in surrounding LGAs.

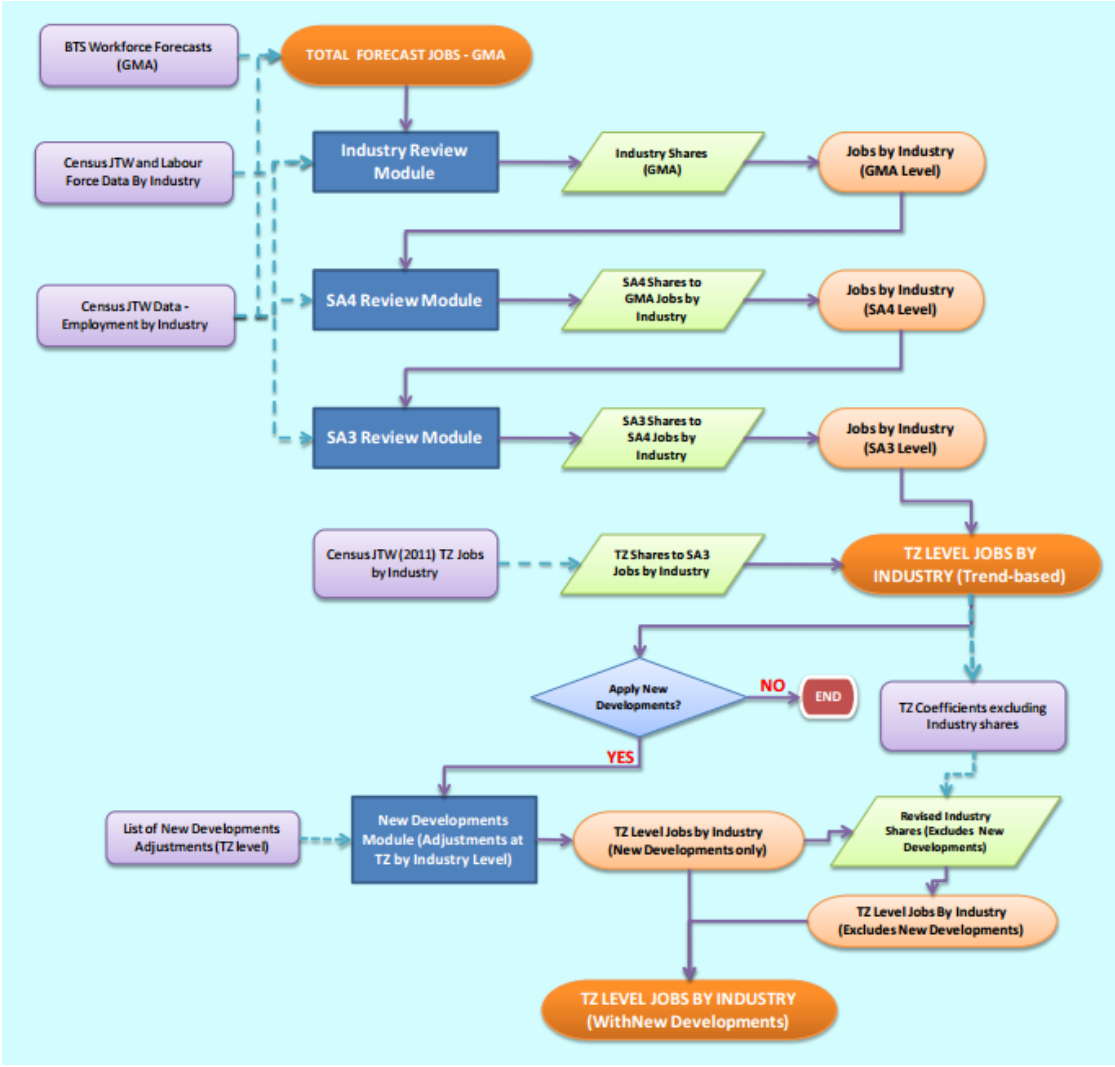
Other major projects will also act as drivers of employment creation and growth for the region. The Moorebank IMT precinct for example is expected to increase from a base of approximately 337 jobs in 2011 to approximately 2,000 jobs in 2041. Like the Badgerys Creek Airport, these onsite jobs will act as catalyst for a range of related offsite jobs across the region.

5.2 Camden Employment Forecasts

In determining employment demand forecasts for this study, MacroPlan Dimasi has reviewed the current (2014) employment forecasts produced by the BTS. This review has considered the methodology and assumptions applied to determine and distribute the scale and mix of employment by individual Travel Zone (TZ). While a detailed explanation of this methodology is available online (www.bts.nsw.gov.au/Statistics/Employment-Forecasts), the flowchart below provides an overview of how the forecasts are derived.

[9] Australian Government, Department of Infrastructure & Regional Development, October 2015

Figure 17. BTS Employment Forecasting Methodology



Source: BTS Employment Forecasts 2011-2041 – September 2014 Release – Technical Documentation

The methodology and assumptions applied to the BTS forecasts are considered suitable and as such, these forecasts have been adopted as a basis for the demand modelling and analysis undertaken for this study.

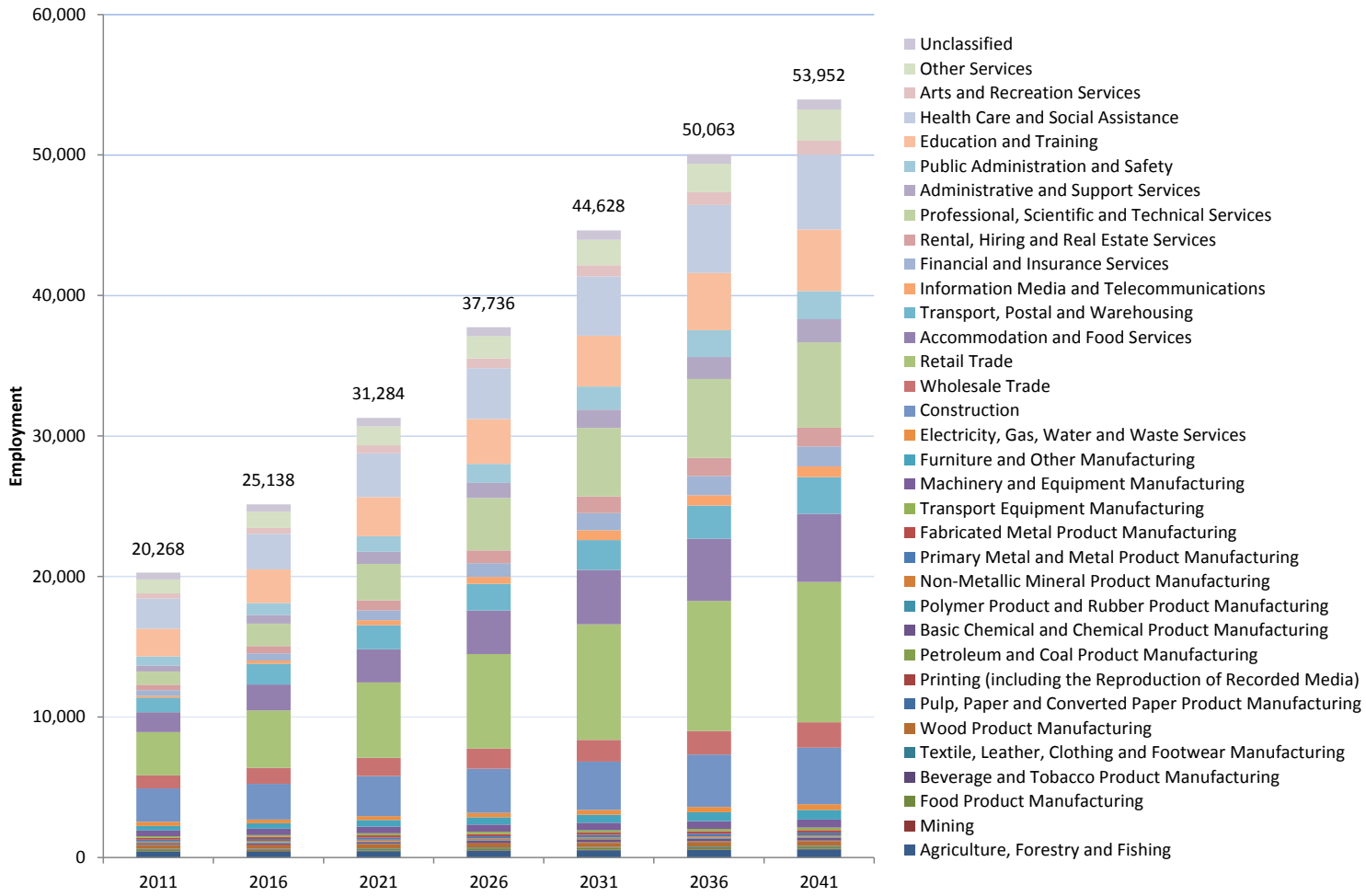
The figure below presents forecasts of employment by industry growth for the Camden LGA from 2011 to 2041. These forecasts indicate the number of jobs located within Camden increasing from 20,268 jobs to 53,952 jobs, an increase of 33,684 jobs or 166% over the 30 year period. This is in comparison to the forecast 264% increase in the 'workforce population' (people aged 20-64) during

the same period, which demonstrates that Camden will remain a net exporter of workers over the long term.

It is noted that the current number of local jobs indicated in the BTS forecasts are higher than that indicated earlier in our report[10]. This is related to the aggregation of data in the BTS methodology as well as its review and updating of datasets. For the purpose of this assessment, the BTS forecasts are considered the most accurate. The variance in the 2011 local employment estimates is not considered likely to influence the implications of analysis in this report.

[10] ABS data used earlier in this report (Section 3) estimated a total of 16,509 local jobs as at 2011, whereas BTS data suggests a 2011 employment base of 20,268. The variation is not significant and does not impact on the interpretation of trends and forecasts assembled for the purpose of this study.

Figure 18. Camden LGA Employment by Industry Forecasts



Source: BTS Employment Forecasts (2014), MacroPlan Dimasi

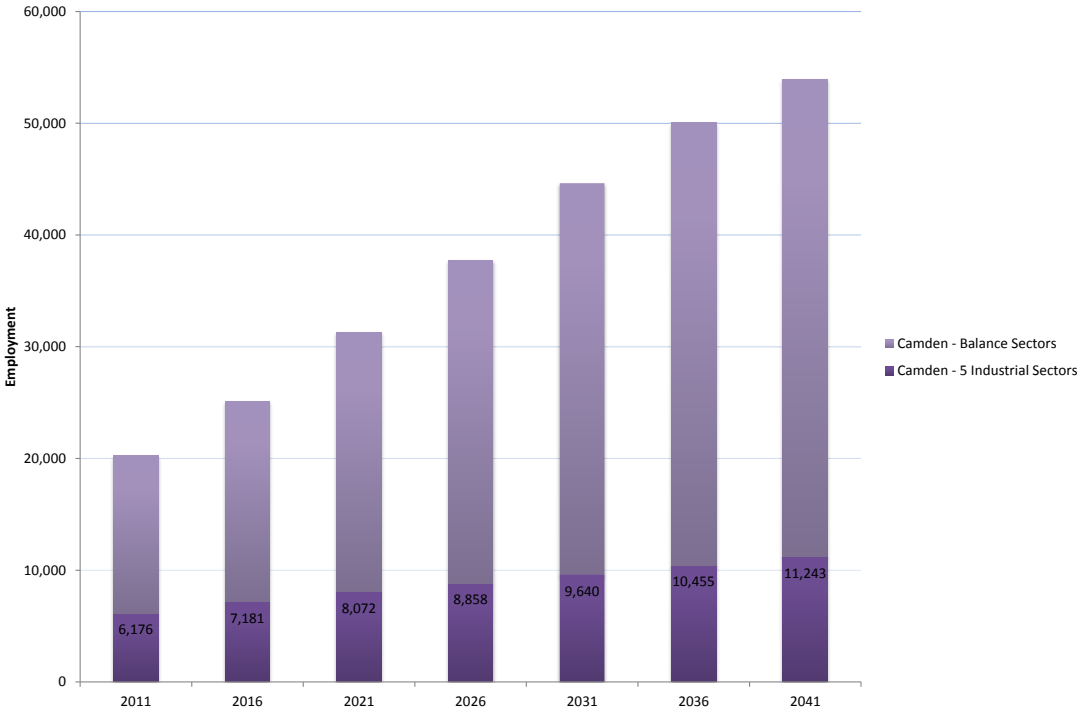
The forecasts above indicate significant growth across a range of population serving industry sectors, such as retail and health services, as a result of the scale of residential development and growth planned for the LGA.

The presence of zoned employment precincts as well as significant infrastructure commitments and investment throughout the broader south-west region will also drive growth across a range of industrial sectors. Opportunity associated with the Moorebank Intermodal and the road corridor upgrade projects that service WSEA and Badgerys Creek Airport, in particular, are noteworthy. Growth generated from this investment in infrastructure will be accommodated across the broader region as well as in Camden.

The following figure illustrates estimated growth in 'traditional' industrial sectors within Camden, including the wholesale trade; transport, postal and warehousing; construction; mining, and manufacturing sectors.

We note that, of the overall employment growth of 33,684 jobs, only 5,068 jobs are expected within these traditional industry sectors. This represents just 15% of the future employment demand for the LGA. It demonstrates that the demand for traditional industrial land in the future will not be as high as for other employment lands that support a more diverse range of employment activities.

Figure 19. Camden LGA Employment Forecasts – Traditional Industrial Sectors



Source: BTS Employment Forecasts (2014), MacroPlan Dimasi

Employment Forecasts – Camden Industrial Precincts

As well as forecasting the growth in employment by industry sector within Camden, the BTS forecasts also provide forecasts at a travel zone (TZ) level.

These TZ level forecasts have been used to isolate estimated growth within zoned and proposed industrial precincts. (A map illustrating these TZs is provided in ***Appendix B***).

The table and figure below indicates estimated growth, across all industry sectors, for the various existing zoned industrial precincts throughout Camden.

The table indicates estimated growth of over 13,000 jobs within Camden's zoned industrial employment centres (including the recently rezoned employment land at Leppington North) over the 30 year period to 2041.

Although only 5,068 'industrial' jobs are forecast with Camden, the BTS forecasts project an additional 13,290 jobs across a range of sectors within Camden's zoned industrial precincts.

Table 15. Employment Forecasts – Camden Industrial Sectors

Employment Precinct	2011	2016	2021	2026	2031	2036	2041	2011-2041
Smeaton Grange	4,890	5,508	6,116	6,736	7,358	7,995	8,678	3,787
Narellan	1,477	1,658	1,838	2,021	2,205	2,393	2,595	1,118
Turner Road/Gregory Hills B5	30	733	1,436	1,640	1,843	2,248	2,252	2,222
Oran Park	0	110	111	112	112	113	114	114
Leppington North	0	396	886	2,495	4,906	5,719	5,933	5,933
Little Street & Ironbark Avenue	22	22	22	22	22	22	22	0
Glenlee	153	168	186	205	225	246	268	115
TOTAL	**6,572**	**8,595**	**10,595**	**13,231**	**16,671**	**18,736**	**19,862**	**13,290**

Source: BTS Employment Forecasts (2014), MacroPlan Dimasi

Note: *The numbers presented reflect a best-fit match between the BTS travel zones and actual planning zone boundaries. The Leppington North TZ incorporates the Leppington town centre but not the adjacent Business Park, whilst the Turner Road / Gregory Hills B5 TZ incorporates most of the zoned employment land at this location. Whilst there are minor variations between zones, the overall employment estimate is sufficiently accurate for the purposes of this study.*

5.3 Key Findings

The key findings from the analysis presented in this section are:

- While the 'working age' population (20-64 years) within Camden is forecast to increase by 264%, local employment is forecast to increase by 166%.
- Camden will to continue to be a net exporter of workers.
- The nature of employment growth forecast within Camden is diversified, covering a wide range of sectors. Traditional industrial sectors are anticipated to comprise only 15% of all employment growth in the LGA.
- While industrial activities are generally more land intensive and the consideration of appropriate land supply is important, our research highlights the need for new types of employment precincts that provide greater flexibility and are able to accommodate a diverse range of employment activity.
- Employment opportunities for Camden's residents, however, will continue to be met in a regional context, with Badgerys Creek Airport, the Moorebank Intermodal and other major infrastructure projects providing a regional catalyst.

Section 6: Land Supply Review and Comparison

This section presents a summary of existing and planned employment land supply within Camden. Using the demand forecasts from Section 5, we also determine the current and future land supply balance.

6.1 Land Supply Assessment

For the purpose of this study, our assessment of Camden's industrial land supply is informed by the New South Wales (NSW) Planning and Environment (P&E) Employment Lands Development Program (ELDP), as well as the Camden Industrial Lands Audit completed by Council in April 2015.

Our land supply assessment considers both existing industrial and B5 precincts as well as proposed employment precincts to determine the overall available future land supply. The following table provides a summary of the existing and proposed industrial and B5 precincts throughout Camden.

Table 16. Camden Industrial Precincts – Existing, Growth Areas and Proposed

Precinct	Status	Total Land Area (Ha)	Developed Land Area (Ha)	Zoned & Undeveloped Land Area (Ha)	Proposed & Undeveloped Land Area (Ha)
Smeaton Grange	Established	199.4	141.1	58.3	0.0
Narellan	Established	34.7	29.0	5.7	0.0
Turner Road	Established	39.5	4.2	35.3	0.0
Gregory Hills (B5)	Established	59.6	10.0	49.6	0.0
Oran Park	SWGC - Zoned	18.5	0.0	18.5	0.0
Leppington North	SWGC - Zoned	70.8	0.0	70.8	0.0
Little Street & Ironbark Avenue	Established	4.1	4.1	0.0	0.0
Glen Lee	Proposed	37.6	0.0	0.0	37.6
Marylands	SWGC - Proposed	25.5	0.0	0.0	25.5
Lowes Creek/Marylands	SWGC - Proposed	63.7	0.0	0.0	63.7
Lowes Creek	SWGC - Proposed	87.7	0.0	0.0	87.7
Catherine Fields	SWGC - Proposed	73.2	0.0	0.0	73.2
Future Industrial	SWGC - Proposed	87.6	0.0	0.0	87.6
TOTALS:		**801.9**	**188.4**	**238.2**	**375.3**

Source: NSW DE&P ELDP 2015 and Camden Industrial Land Audit, 2015

Note: The above table does not include the new B7 zoned precinct at Leppington North, which is not directly within the scope of this study. B5 land at Gregory Hills is distinguished from other 'industrial' land.

There is approximately 801.9ha of employment land across 7 existing zoned and 6 proposed precincts (all of which, other than Glenlee, are located in the yet-to-be released north and north-western parts of the SWGC). Of this supply, 613.5ha (or 76%) remains vacant, with 238.2ha zoned (including existing industrial land and B5 land) and 375.3ha proposed but not yet zoned.

The ELDP (2015) informs us that of the 188.6ha of zoned and undeveloped industrial land within the Camden LGA (i.e. not including B5 land at Gregory Hills), 65.2ha is zoned and serviced and therefore readily available for development. This is comprised of:

- Narellan – 5.3ha
- Oran Park – 18.5ha
- Smeaton Grange – 32.1ha
- Turner Road – 9.3ha

In addition, we estimate that 49.6ha of the 59.6ha Gregory Hills B5 is zoned, undeveloped and serviced, bringing the total undeveloped and serviced supply to 114.8ha of land.

There has been relatively limited industrial lands development across the Camden LGA in recent years with Smeaton Grange being the exception, experiencing 20.5ha of take up in 2014 and a total of 53.1ha of take up since 2008. Camden has averaged a land take up rate of around 8ha of industrial land per annum over the past 5 years (ELDP, 2015).

A summary of the existing employment precincts throughout Camden is provided at ***Appendix C***, including commentary on the current and future locational attributes and precinct conditions that will likely influence ongoing development and growth opportunities.

In addition to the employment lands located within Camden, the scale of employment precincts throughout the South West subregion is significant and underpins the forecast employment demand and service needs of the region. The

extent of employment land is reflective of the scale of planned residential growth across the whole of the SWGC.

Precincts such as the Moorebank IMT, the WSEA and the Western Sydney Priority Growth Area will enable the location of strategically important projects based on their specific purpose and locational attributes/advantage. These precincts are likely to generate catalyst activity that is expected to provide a whole-of-region employment benefit.

6.2 Land Supply Balance Comparison

The future balance of employment land supply is derived from a comparison of employment demand, converted into land supply need, and the supply of vacant land throughout Camden's existing and planned employment precincts.

Our analysis utilises the employment demand forecasts presented in Section 5, which have been further analysed to determine the forecast growth within zoned and proposed industrial precincts in Camden.

The following table translates these forecasts into future land area needs. This process relies on a number of assumptions, including the application of an average floorspace ratio of between 20 to 150m^2 per employee (depending on specific industry sector), and an average plot ratio of 0.5 (based on gross land areas). This methodology applies our analysis of forecast growth within each industry sector, within each precinct.

The forecasts also take into consideration a 100% demand scenario and a 75% demand scenario. The purpose of the 75% demand scenario is to take into consideration the potential for more efficient use of employment lands as a result of technological advancements or similar.

Table 17. Forecast Additional Employment Land Needs – 2011 to 2041

Forecast Category	2011	2016	2021	2026	2031	2036	2041
Camden - Employment Forecasts	6,572	8,595	10,595	13,231	16,672	18,736	19,862
Floorspace Estimates (sq.m)	743,247	910,884	1,072,987	1,271,170	1,516,150	1,660,704	1,762,119
Land Requirement (Ha) - 100% Scenario	148.6	182.2	214.6	254.2	303.2	332.1	352.4
Land Requirement (Ha) - 75% Scenario	148.6	173.8	198.1	227.8	264.6	286.3	301.5
Vacant Land Requirement (Ha) - 100% Scenario		33.5	65.9	105.6	154.6	183.5	203.8
Vacant Land Requirement (Ha) - 75% Scenario		25.1	49.5	79.2	115.9	137.6	152.8

Source: MacroPlan Dimasi

As indicated, the scale of employment growth within zoned and proposed industrial precincts throughout Camden, and based on typical industrial employment conditions, is expected to generate a need for an additional 152.8ha - 203.8ha of employment land by 2041. The effect of this projection on existing and proposed employment lands is dependent on the proportion of growth that is estimated to be contained within each precinct, as well as the type of growth (based on industry sector).

The following tables and figure translate the projected additional land requirement into remaining land supply balance at five year intervals. This takes into consideration the combined current zoned and vacant supply (238.2ha) and proposed unzoned future supply (375.3ha).

Table 18. Employment Land Supply Balance – 2011 to 2041 (Zoned & Proposed Supply)

	2011 Vacant Supply	2016	2021	2026	2031	2036	2041
Industrial Land Supply Balance (Ha) - 100% Scenario	613.5	580.0	547.6	507.9	458.9	430.0	409.7
Industrial Land Supply Balance (Ha) - 75% Scenario	613.5	588.4	564.0	534.3	497.6	475.9	460.7

Source: MacroPlan Dimasi

As indicated, at 2041 there is forecast to be a remaining supply balance of between 409ha to 460ha of vacant land across the collective employment precincts in Camden, taking into account the large amount of future proposed industrial land.

If we consider the 'zoned supply only', i.e. 238.2ha of zoned and undeveloped land, we find that supplies will be sufficient to 2041 under a 100% utilisation assumption, but will be approaching exhaustion. This highlights the need for new supplies to be brought to market to satisfy demand going forward and for planned new precincts to be zoned and available to market commencing by around 2031-2036.

The following table provides a more detailed breakdown of the future land supply balance by comparing employment demand and land supply conditions for each specific employment precinct. These forecasts rely on the same assumptions used in the analysis presented above.

Table 19. Forecast Land Supply Balance – Precinct Specific Assessment

Precinct	2011 Employment Capacity	Developed Land Area (Ha)	Vacant Land Area (Ha)	Forecast Employment Growth (2011 - 2041)	Land Area Demand (Ha) - 100%	Land Area Demand (Ha) - 75%	Land Supply Balance - 100%	Land Supply Balance - 75%
Smeaton Grange	4,890.0	141.1	58.3	3,787.0	82.2	61.7	-23.9	-3.4
Narellan	1,477.0	29.0	5.7	1,118.0	23.0	17.3	-17.3	-11.6
Turner Road/Gregory Hills B5	30.0	14.2	84.9	2,222.0	28.9	21.7	56.0	63.2
Oran Park	0.0	0.0	18.5	114.0	1.3	1.0	17.2	17.5
Leppington North	0.0	0.0	70.8	5,933.0	65.6	49.2	5.2	21.6
Little Street & Ironbark Avenue	22.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0
Glenlee	153.0	0.0	37.6	115.0	2.8	2.1	34.8	35.5
Marylands	0.0	0.0	25.5	0.0	0.0	0.0	26.0	26.0
Lowes Creek/Marylands	0.0	0.0	63.7	0.0	0.0	0.0	64.0	64.0
Lowes Creek	0.0	0.0	87.7	0.0	0.0	0.0	88.0	88.0
Catherine Fields	0.0	0.0	73.2	0.0	0.0	0.0	88.0	88.0
Future Industrial	0	0	87.6	0	0	0	73	73
TOTALS + BALANCE:	**6,572**	**188.4**	**613.5**	**13,290**	**204**	**153**	**409.5**	**460.5**
ZONED & VACANT + BALANCE:			238.2		204	153	34.2	85.2

Source: MacroPlan Dimasi

- *2011 employment is estimated, based on BTS and ABS data.*
- *Several precincts are currently proposed but not yet zoned. Whilst these have been considered in future supply, employment forecasts for these precincts have not yet been prepared by BTS.*

The precinct specific land supply forecasts indicate that most precincts are expected to have sufficient supply to accommodate forecast employment growth and demand to 2041. The Smeaton Grange and Narellan precincts are forecast to have some level of potential supply constraint, however there is potential for this supply to be compensated within other existing precincts, including the adjacent B5 land at Gregory Hills and through further planned supplies.

6.3 ELDP Benchmark Measures

Having regard for the above raw numbers, it is possible to provide an indication of the forecast net industrial land supply conditions in relation to the ELDP supply benchmark standards, which are:

- *Undeveloped zoned and serviced land - 5-7 years supply*
- *Undeveloped zoned but not yet serviced - 8-10 years supply*
- *Strategy identified land (unzoned) - 20 years supply*

The table below calculates the estimated years supply for each land supply category based on an average annual land take up of 20 hectares of employment land.

This is higher than the average take-up of industrial land experienced over the past 5 years at Camden and higher than that implied by the BTS employment estimates, but is similar to what was experienced across the LGA (largely at Smeaton Grange) in 2014. It also accounts for the inclusion of B5 employment land in the forecast.

Table 20. ELDP Supply Benchmark Review

Land Supply Category	Land Supply (Ha)	Years Supply
Zoned & Serviced Vacant Supply	114.8	5.7
Zoned & Unserviced Vacant Supply	123.4	6.1
Proposed Supply	375.3	18.7

Source: MacroPlan Dimasi

As indicated, the current provision of vacant serviced employment land across Camden meets the ELDP benchmark targets. This achievement is buoyed by the quantum of serviced B5 employment land at Gregory Hills Corporate Park.

Notably, however, the supply of back-up land, i.e. zoned but not yet serviced land, falls short of the government's planning benchmark. Future proposed supplies are also less than sufficient, according to the benchmark targets.

The benchmark review clearly suggests that Council cannot afford to rest on its laurels whilst available stocks are used up. Further action is required to ensure that un-serviced and proposed employment land is delivered to market in a timely manner. The speed at which new market activity may occur is discussed further below.

6.4 Future Supply Considerations

Our analysis shows that several zoned precincts are likely to reach exhaustion before 2041, but that the overall supply of potential new employment land is generally sufficient.

The take-up of land at zoned precincts is expected to slow over the 2026-2041 period, as the amount of vacant land lessens and the areas of vacant lots become smaller. As the residual gets smaller, the land values will tend to rise sharply. Increasing land values will tend to push demand for employment land towards more affordable locations.

It is important that Camden Council prepares for this market pressure, through rezoning to allow for competition across numerous development fronts.

Based on the BTS employment forecasts, the cumulative demand for land is projected to be 204 hectares over the 2011-2041 period. To achieve the LGA employment growth that is projected over the long-term, our expectation is that it will be necessary for further supplies of zoned and serviced land to become available well prior to the point of exhaustion in Camden's established precincts. Adding to the supply pipeline is beneficial to the efficient function of the employment land market.

It is necessary therefore to consider the sequencing of land take-up across the LGA. This outlook is useful for the consideration of the rezoning and servicing process that Council might aim to achieve for land that is proposed for future employment purposes.

In particular, we consider the prospective timing and location for the rezoning process. There are several criteria that we reference to guide a view on sequencing, including:

- Proximity to road infrastructure – essential as a basis for movement of goods and workers. The current phase of massive investment in the region's road network, expanding several roads to 6-lane highways, needs to be factored into the market demand for employment lands.

- Position relative to Badgerys Creek and the Moorebank IMT – sources of demand for employment lands, which are not clearly integrated into the 2014 BTS job projections for Camden.

- Potential value as residential land – sites that are proximate to residential areas may become less suitable for industrial purposes, depending on shifts in business demand.

It would be prudent to allow for the rezoning of new land well prior to the employment effects of the major infrastructure projects in proximity to Camden LGA. Businesses will tend to acquire sites to allow for future expansion in this region, creating a rare pull-forward effect in demand. Commencement of airport operations is expected during the mid-2020's.

Our view is that the demand for zoned employment land in the 2026-2041 period may exceed the actual creation of jobs, as businesses seek to position for their long-term development beyond 2041.

Camden is well placed to provide employment lands, as a complement to the areas that are being targeted in surrounding LGAs (particularly Liverpool and Penrith).

Camden's productivity benefits are due to the expansion of road network capacity. Upgrades to Bringelly Road and the Old Northern Road will provide for efficient movements from the planned Badgerys Creek airport, and represent a

vital transport conduit to Elizabeth Drive. These roads will also provide opportunities for freight movement from the Moorebank IMT.

In light of the fundamental changes in the regional transport network, we recommend that additional land be rezoned prior to 2026, which would target demand that is not currently factored into the BTS employment projections. We recommend rezoning to allow for an additional 60 hectares of take-up during the 2026-2041 period.

The preferable targets for rezoning in the short-term would be land in locations adjacent to the road network upgrades. Of the identified future zone locations, the 'Future Industrial' area and Lowes Creek (south of the Bringelly Rd/Old Northern Rd intersection) appear as the two best candidates, in addition to further land identified at Catherine Fields. Further consideration may, however, be given to the precise location of employment zones in the northern part of the LGA in light of planned road upgrades and rail connections.

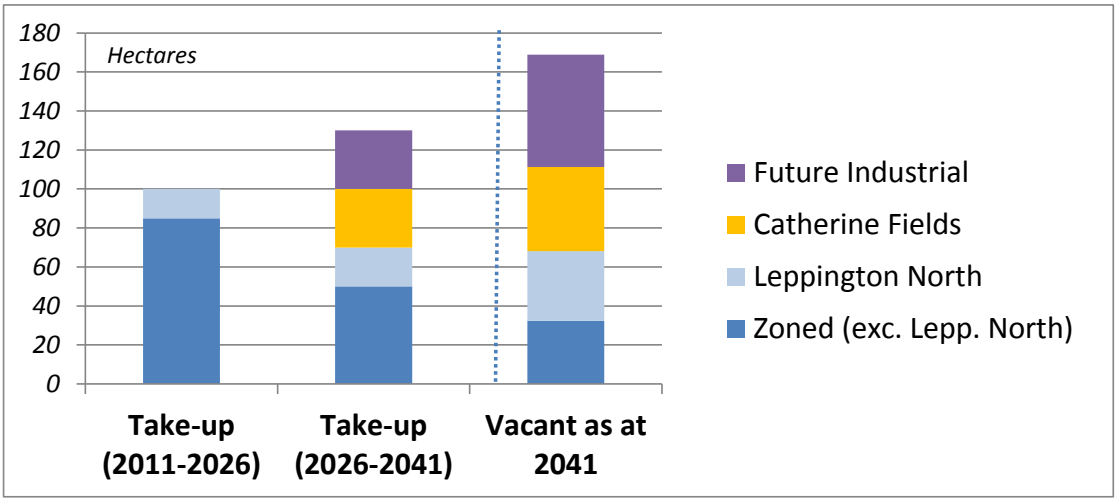
The chart below shows a projected take up of land, allowing for new lands coming on line and adjustments to the BTS employment projections for travel zones. The take-up in zoned areas (to the south of the LGA) is projected to slow in the second half of the 30-year period. The chart reflects a greater spread of employment across the LGA than is embedded in the BTS forecasts, so that there is a small residual area of current zoned land still vacant as at 2041.

Take-up at Leppington North is high in the short-term (given that the 2011-2026 period is already well underway), and then slows.

Rezonings of areas at Catherine Fields will provide for some shift in demand away from the southern zoned precincts, which is logical given the upgrade to Camden Valley Way, and the gravitation of residential development to this location. Catherine Fields can also benefit from demand for services linked to the Moorebank IMT.

The 'Future Industrial' / Lowes Creek precincts are obviously well positioned to benefit from infrastructure improvements and to support activities at Badgerys Creek.

Figure 20. Projected Employment Land Take-up – Camden, 2011-2041



Source: MacroPlan Dimas

6.5 Key Findings

The key findings from our analysis of the demand-supply balance of employment lands within Camden are:

- Substantial supplies of ready-to-develop industrial land are available at Smeaton Grange and B5 employment land at Gregory Hills Corporate Park, as well as other precincts.
- The current provision of vacant serviced employment land across Camden just meets the ELDP benchmark target of 5-7 years supply, if we assume an annual take-up of 20ha.
- This take-up is greater than that implied by the BTS employment forecasts but is reasonable for planning purposes, having regard for Camden's rate of population growth and planned regional infrastructure.
- On this basis, the supply of back-up land, i.e. zoned but not yet serviced, falls short of the government's planning benchmark. Future proposed supplies are also less than sufficient, according to the benchmark targets.

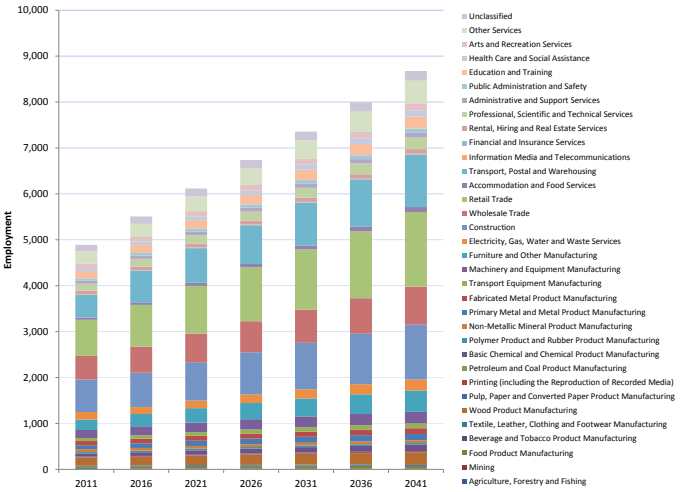
- These shortfalls highlight the need for new proposed precincts to commence prior to the exhaustion of current developable stocks, i.e. well before 2041.
- Our view is that the demand for zoned employment land in the 2026-2041 period may exceed the actual creation of jobs as forecast by BTS, as businesses seek to position for their long-term development beyond 2041.
- In light of the fundamental changes in the regional transport network, we recommend that additional land be rezoned prior to 2026, which would target demand that is not currently factored into the BTS employment projections. We recommend rezoning to allow for an additional 60 hectares of take-up during the 2026-2041 period.
- Locations that stand to benefit from infrastructure upgrades are logical candidates for such consideration.
- Further consideration may need to be given to the precise location of future employment zone lands in the northern part of the LGA in light of planned road upgrades and rail connections.
- Consideration of new supply should also factor the potential that planned sites that are proximate to residential areas may become less suitable for industrial purposes.

Section 7: Industrial Precinct Review

This section provides a review of Camden's individual employment precincts on the basis of land supply and the future demand conditions outlined in the previous sections and as specifically demonstrated in Table 17 above.

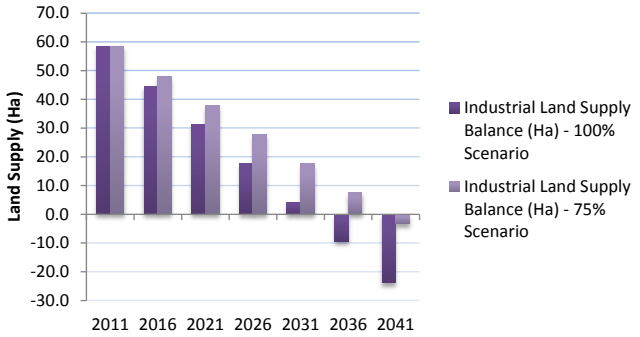
Smeaton Grange

Smeaton Grange will continue to be an important employment precinct supporting a range of industrial related activities. There will be pressure over the medium to long term for vacant land within this precinct to be serviced and made available for development, unless precincts such as Glenlee are provided as suitable alternatives.



Smeaton Grange has a diverse employment profile and while this is likely to continue, future employment growth will be driven by a number of traditional industrial sectors, as well as strong growth in retail-related industry.

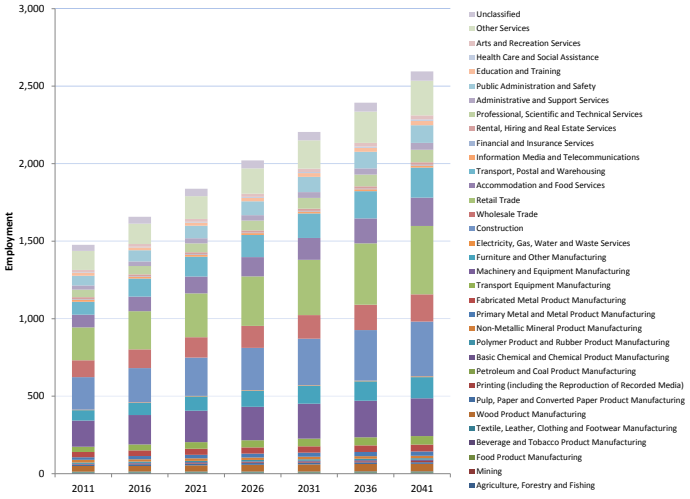
	2011	2016	2021	2026	2031	2036	2041
Industrial Land Supply Balance (Ha) - 100% Scenario	58.3	44.5	31.2	17.7	4.2	-9.4	-23.9
Industrial Land Supply Balance (Ha) - 75% Scenario	58.3	47.9	38.0	27.8	17.7	7.5	-3.4



The remaining land supply within Smeaton Grange is likely to be consumed over the period to 2041. Zoned land at Turner Road provides a proximate alternative and allows for the effective expansion of the combined precinct.

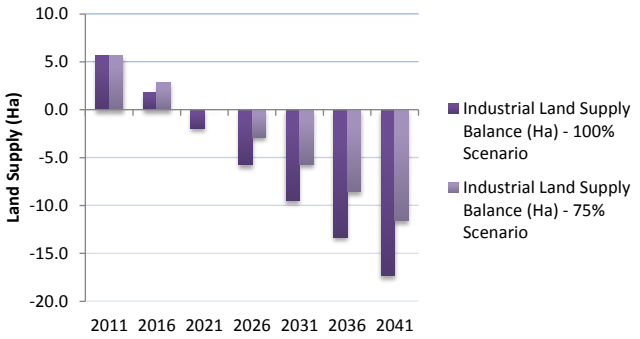
Narellan

While there is expected to be growth across construction, manufacturing and service industrial sectors, a substantial volume of growth is also expected in non-industrial sectors such as retail and accommodation. This growth is likely to be accommodated in an expended centre offering, reflective of the town centre's current expansion and its planned connection to the South West Rail network.



Narellan will continue to act as a strong service industry precinct, meeting the needs of the local community. The employment forecasts indicate a degree of non-industrial employment which is likely to be associated with the nearby Narellan town centre expansion.

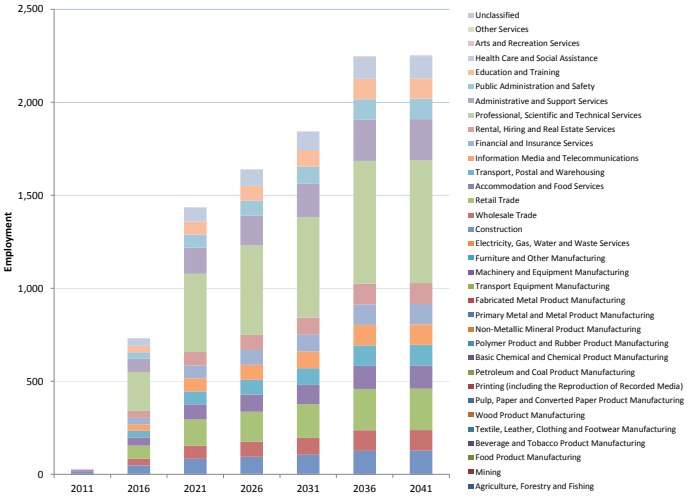
	2011	2016	2021	2026	2031	2036	2041
Industrial Land Supply Balance (Ha) - 100% Scenario	5.7	1.8	-1.9	-5.7	-9.5	-13.3	-17.3
Industrial Land Supply Balance (Ha) - 75% Scenario	5.7	2.8	0.0	-2.9	-5.7	-8.5	-11.6



While this analysis indicates a potential undersupply within the precinct over the short to medium term, it is also likely that employment densities at Narellan could increase over time, reflecting its prime position with respect to major roads, the adjacent town centre and proposed rail connections. The Narellan industrial estate could be expected to evolve over time to more of a mixed-use offering.

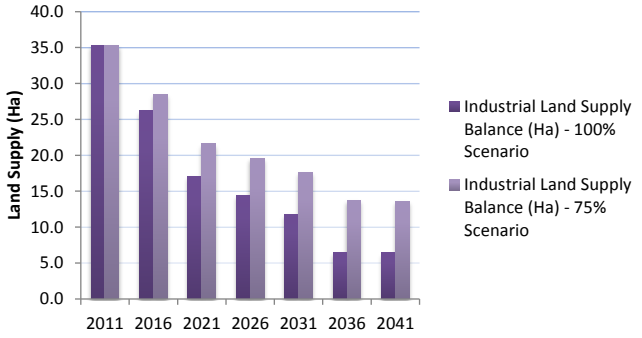
Turner Road (excluding B5 land in Gregory Hills Corporate Park)

The Turner Road precinct is expected to attract significant employment growth, with the precinct benefitting from its proximity to Smeaton Grange, effectively acting as an expansion buffer for this precinct. The precinct is expected to attract demand from a range of traditional and service industry uses as well as large format retail and business supply uses, which will be required in response to the growing local residential population.



The Turner Road precinct is expected to have a much more 'technical' character comprising a mix of blue collar industry, white collar commercial, and pink collar retail type employment activities. This will add employment diversity to the local region and assist in supporting the LGA's employment self-containment.

	2011	2016	2021	2026	2031	2036	2041
Industrial Land Supply Balance (Ha) - 100% Scenario	35.3	26.2	17.0	14.4	11.7	6.5	6.4
Industrial Land Supply Balance (Ha) - 75% Scenario	35.3	28.4	21.6	19.6	17.6	13.7	13.6

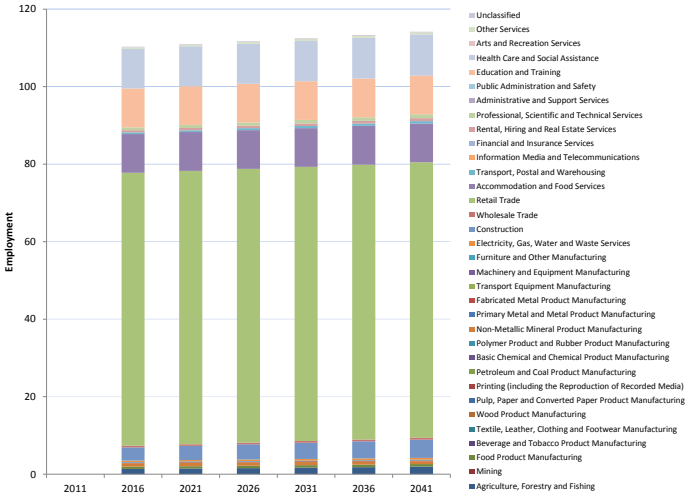


Turner Road has strong capacity to support employment growth to 2041.

Take-up within the precinct is expected to accelerate over the medium to long term, feeding off the gradual take-up of land at Smeaton Grange and Narellan.

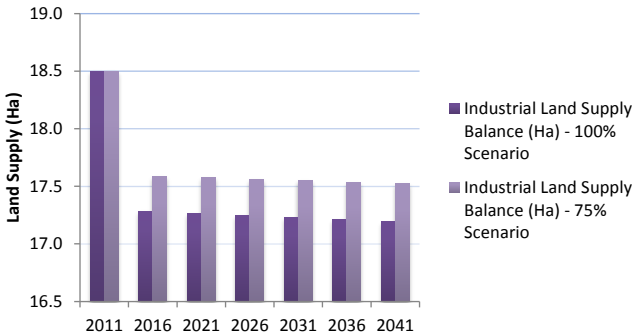
Oran Park

The BTS employment forecasts for Oran Park have not, at this stage, anticipated any industrial employment growth within Oran Park, despite the current zoning of this 18.5ha precinct. The precinct does provide potential to increase supply within the region over the medium to long term however it competes directly with the more generous industrial offerings at Narellan, Smeaton Grange and Turner Road and proposed industrial releases to the north. Given its location at a gateway to the Oran Park Town Centre, its future use is more likely to be limited to service-oriented uses, rather than 'pure industrial'. A greater employment density therefore could potentially be achieved over a smaller land offering.



Employment growth is not anticipated at this precinct for quite some time, perhaps reflective of the estate's positioning between an established supply front (at Narellan and Smeaton Grange) and a future front at the north-western edge of the SWGC.

	2011	2016	2021	2026	2031	2036	2041
Industrial Land Supply Balance (Ha) - 100% Scenario	18.5	17.3	17.3	17.2	17.2	17.2	17.2
Industrial Land Supply Balance (Ha) - 75% Scenario	18.5	17.6	17.6	17.6	17.5	17.5	17.5



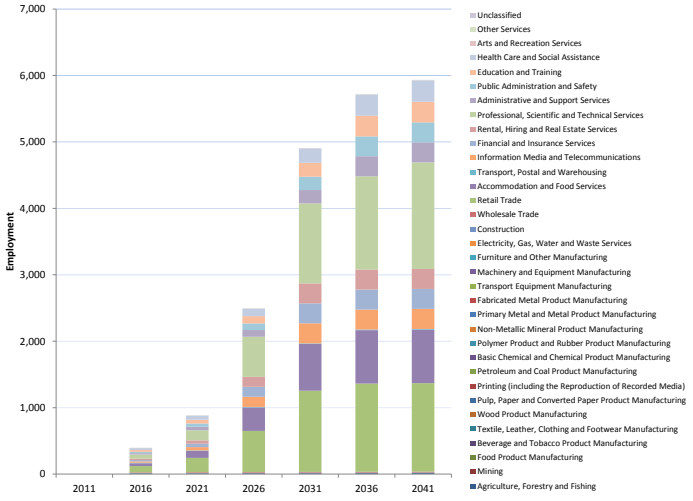
The precinct's employment capacity is probably best realised as a service-oriented centre, rather than for traditional IN2 light industrial purposes. A more flexible zoning might be appropriate to realise the land's employment capacity sooner.

Leppington North (excluding adjacent B7 Business Park land)

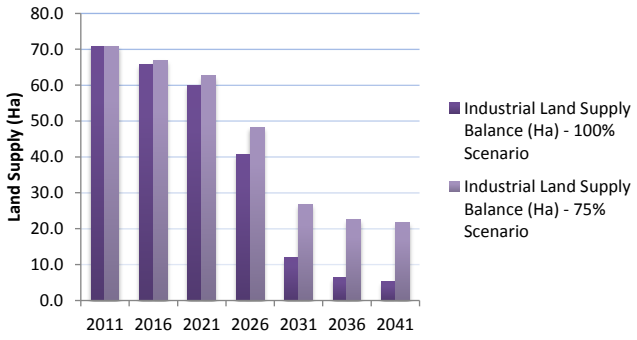
Leppington North is strategically located at the northern wedge of the SWGC lands and is well placed, in an employment sense, to leverage from existing and further planned infrastructure that will service this locality.

Current employment forecasts for the travel zone are skewed to town centre type employment opportunities, with limited growth expected across traditional industrial sectors.

Depending on the timeliness of land releases within the nearby WSEA, some re-thinking of land use allocations in this area may be necessary. With further industrial provisions elsewhere, there is expected to be strong competition for land adjacent to the South West Rail line to be used for residential purposes.



	2011	2016	2021	2026	2031	2036	2041
Industrial Land Supply Balance (Ha) - 100% Scenario	70.8	65.7	59.8	40.7	12.1	6.4	5.2
Industrial Land Supply Balance (Ha) - 75% Scenario	70.8	67.0	62.6	48.2	26.8	22.5	21.6



Current employment forecasts indicate strong 'town centre' growth however limited industrial employment growth. The travel zone includes the Leppington town centre.

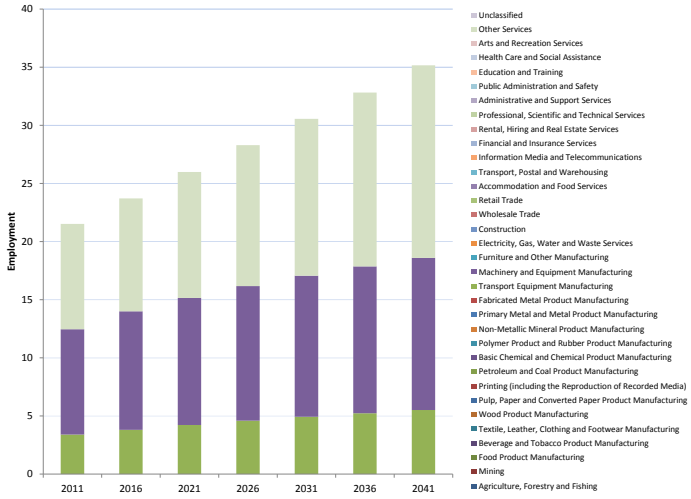
The land supply balance indicated is conservative as much of the 'town centre' type employment growth is likely to occur outside of the IN1 zoned precinct.

Forecasting relevant to this precinct should be reviewed periodically to account for town centre development and to factor in employment growth in the adjacent B7 lands, which is not picked up in our analysis. B7 development may outstrip the take-up of the IN2 land.

Little Street & Ironbark Avenue

The Little Street and Ironbark Avenue precincts are restricted in size and in their ability to accommodate future growth. Non-industrial uses have already begun to encroach on zoned employment land. Also, proximate residential uses will continue to increase the potential for land use conflict at these locations.

Due to the small scale of these precincts, there will be limited impact on the overall land supplies if they were to be rezoned and existing industrial uses relocated. Existing B4 zoned land at the northern edge of the Camden town centre currently accommodates a range of service industries. The co-location of such services around the town centre is an appropriate use of land and offers potential for the absorption of services displaced from these estates. Alternate locations include land at Glenlee and at Narellan.



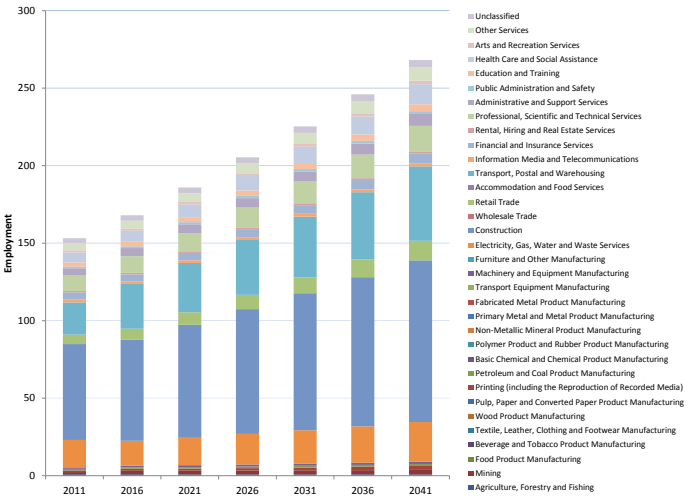
Forecast employment growth is predominantly non-industrial and therefore the impact on land supply needs is negligible.

There is opportunity for existing occupancies to transition out of these estates. This is already occurring at Ironbark Avenue. This site could transition to a B1 or B2 centre, with provision for local retail and shop-top or medium density housing.

Little Street has obvious residential qualities. As such, Council may choose to assist established industry uses to relocate. Some existing uses are obviously better suited to traditional industrial estates rather than a small pocket squeezed between residential sites.

Glenlee

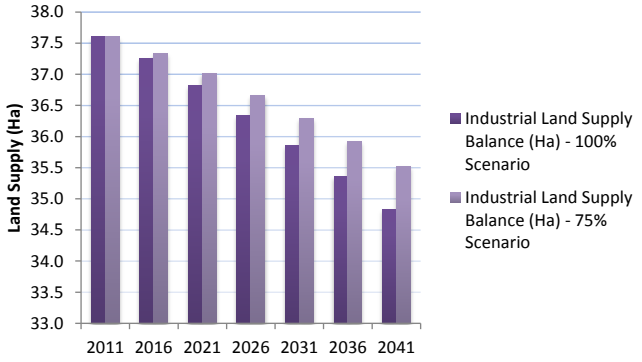
The proposed Glenlee precinct would provide a positive contribution in terms of the scale of vacant supply that it could provide, as well as its location given the proximity to residential growth areas such as Spring Farm and Menangle Park. The precinct is well located to support service industry growth and small to medium scale manufacturing type land uses.



A relatively minor amount of employment growth has been predicted for this estate, perhaps more reflective of its current uses rather than its full potential as a new industrial offering.

	2011	2016	2021	2026	2031	2036	2041
Industrial Land Supply Balance (Ha) - 100% Scenario	37.6	37.2	36.8	36.3	35.9	35.4	34.8
Industrial Land Supply Balance (Ha) - 75% Scenario	37.6	37.3	37.0	36.7	36.3	35.9	35.5

If this precinct is able to be zoned, it is expected that a proportion of growth currently forecast within precincts such as Smeaton Grange and Narellan, could be redistributed to this precinct.



The proposed Glenlee precinct provides strong opportunity to support industrial employment growth over the medium to long term and alleviate potential supply constraints within other precincts.

Section 8: Planning Instrument Review

This section provides a review of the various planning provisions that apply to Camden's industrial precincts, based on a comparison with other LGAs.

Our analysis of local statutory and non-statutory planning controls has involved a comparison of local environmental plan (LEP) and development control plan (DCP) regulations that apply at Camden, Liverpool, Fairfield and Campbelltown LGAs. We have considered the controls relevant to development within the B5 – Business Development, B6 – Enterprise Corridor, IN1 – General Industrial and IN2 – Light Industrial zones.

The LEPs for each of the abovementioned LGAs include IN1 – General Industrial, IN2 – Light Industrial, and B5 – Business Development zones. The Fairfield LEP 2013 and the Liverpool LEP 2008 also include a B6 – Enterprise Corridor zone.

Results

Zone objectives and permissible land uses:

The objectives for each of the relevant land use zones are similar. Only the Liverpool LEP 2008 offered some notable differences, most likely in response to its long standing Regional Centre status in successive Sydney metropolitan plans.

The permissible land uses in each of the comparable zones is also similar. It is worth noting however, that both the current Campbelltown LEP 2002 and the Draft Campbelltown LEP 2014 permit **'bulky goods'** development in the Industry B Zone, Industry C Zone (current LEP), the IN2 - Light Industrial zone and the B5 – Business Development zone (draft LEP). None of the other LEPs include bulky goods in their comparable zones.

The inclusion of bulky goods in several of Campbelltown's land use zones provides a competitive advantage in attracting additional development formats.

We note that 'bulky goods' is listed as an additional permitted land use in the Narellan IN2 – Light Industrial zone, but this provision does not extend to elsewhere in the LGA.

Both the Camden and Liverpool LEPs permit **'offices premises'** within their respective B5 – Business Development zones, with the proviso incorporated within the zone objectives to "encourage development that supports or complements the primary office and retail functions of the local centre zone". Camden also permits **'business premises'**.

Conversely, neither the Fairfield or draft Campbelltown LEPs permit any office based land uses within the same zones. They do permit 'high technology' industries however, which are likely to have a quasi-office configuration, whilst a small to medium office component is often an ancillary element to most contemporary industrial developments.

Development Standards:

There is a reasonable degree of variation between developments standards across all the compared LGAs. It is noteworthy that a relatively small minimum **lot size** of 930m^2 applies to the Wetherill Park industrial estate (Fairfield) compared to 2000 – 4000m^2 in Narellan and Smeaton Grange, yet this has not deterred construction of numerous large scale warehouse and distribution centres. A smaller minimum lot size in Camden may entice further development activity.

In relation to **building height** and **floor space ratio** standards, the controls in the Wetherill Park and Prestons industrial estates are quite generous compared to those for Narellan and Smeaton Grange.

Table 21. Lot Size Minimums in comparable industrial zones/estates

Camden	Narellan	Smeaton Grange
	2,000m^2	2,000 – 4,000m^2
Liverpool	M7 Corridor	Prestons
	2000m^2	2000m^2
Campbelltown	Ingleburn	Minto
	4,000m^2	4,000m^2
Fairfield	Wetherill Park	
	930m^2	

Table 22. Height of Building standards in comparable industrial zones/estates

Camden	Narellan	Smeaton Grange
	9.5m	11m
Liverpool	M7 Corridor	Prestons
	15 – 30m	30m
Campbelltown	Ingleburn	Minto
	12m	12m
Fairfield	Wetherill Park	
	None	

Table 23. FSR Standards in comparable industrial zones/estates

Camden	Narellan	Smeaton Grange
	1:1	1:1
Liverpool	M7 Corridor	Prestons
	None	0.75:1 - None
Campbelltown	Ingleburn	Minto
	None	None
Fairfield	Wetherill Park	
	None	

Development Control Plans:

There is a reasonably high degree of variation between setback and parking standards across all Councils. Front setback controls range from 7.5 metres up to 30 metres, a large portion of which must be landscaping. Given rising land values, there may be an opportunity to review such controls.

The parking controls of each respective LGA are generally similar. Those for Camden are marginally more generous, e.g. Camden's parking requirements for office/business floor area (i.e. 1 space/40m^2) are less than each of the other LGAs (i.e. 1 space/35m^2).

We have also considered the specific planning provisions and design and development controls incorporated within the **Growth Centres SEPP** and in the relevant **SWGC Development Codes** with respect to employment precincts.

The most relevant provisions and codes are those prepared for Leppington Town Centre, Oran Park and Turner Road. Not many of the other precincts released thus far incorporate employment lands, other than the Leppington North precinct (i.e. Leppington Town Centre), which includes IN2 and B7.

The Growth Centre Development Codes adopt a 'new urbanism' approach and are very much concerned with precinct function and attractiveness. The Codes, for example, adopt different setback and landscaping requirements for both commercial and industrial development depending on road function, site position and pedestrian and vehicular priorities.

The Oran Park DCP 2007 incorporates controls that are fairly typical of most contemporary industrial precincts, prescribing a maximum building height of 12 – 15m, no prescribed building setbacks but firm landscaping expectations. The DCP references the parking controls listed in the Camden DCP 2006.

The Turner Road DCP 2007 provides for a range of setback requirements, from 0m to 7.5m. The DCP references the parking controls of Camden DCP 2006.

Summary

A full account of the various LEP and DCP controls that apply to the employment zones across the various Council areas is provided at ***Appendix D*** to this report.

The planning controls utilised by the various Councils are predominantly consistent with the standardised LEP guidelines, with some limited variation in permitted development across the LGAs.

There is quite a range, however, in the basic lot size, building height and FSR standards applied across the Council areas. Fairfield and Liverpool LGAs, for instance, have slightly more generous building height and floor space ratio controls (in some cases, no controls at all are prescribed). Lots size minimums also vary quite markedly.

The Growth Centres SEPP and corresponding Development Control Plans (DCPs) are more outcomes-focused in terms of precinct character and, in some cases, more flexible than Council DCPs, buy in other ways much more prescriptive.

Council DCP controls for setbacks and car parking vary to some extent. Setbacks vary from 7.5m to 30m, and car parking standards differ, both in terms of their flat rates and their requirements for additional visitor and cycle parking.

Recommendations Arising

The major recommendations arising from our review of applicable planning and land use controls across neighbouring Councils and this applicable to the SWGC employment precincts are:

- There would appear to be benefit in aligning the various Council instruments and codes so that industrial development across the south west was subject to common permissibility and development provisions.
- There would also appear to be benefit in aligning some of the basic criteria for industrial and commercial development between the Council codes and the Growth Centre Development Codes.

Appendix A: Background Literature Review

The following strategies and reports provide a spatial and planning context that underpins the consideration of Camden's employment land supplies.

All documents are considered in their chronological order.

Sydney Canberra Corridor Regional Strategy (2006)

The Sydney Canberra Corridor Regional Strategy (SCCRS) represents an agreed stance between the NSW Government and ACT on the future of the Sydney-Canberra Corridor.

The SCCRS outlines the specific regional infrastructure requirements for the transport corridor up until 2031. Its purpose is to guide and assist future infrastructure investment along the corridor. The strategy applies to the local government areas of Wingecarribee, Goulburn Mulwaree, Upper Lachlan, Yass Valley, Palerang and Queanbeyan. It does not specifically relate to the Camden LGA but is relevant to its outer-Sydney location and the LGA's potential attractiveness to businesses that operate along the Sydney-Canberra corridor or that could be strategically enhanced by proximity to it.

The strategy document notes that the Sydney-Canberra Corridor is:

- A region of significant potential;
- A national passage for transport, communication flows, goods and services; and
- Represents a key economic advantage for the South West region

The Strategy asserts that increased freight movement between Sydney and Melbourne will result in a 70% increase in heavy truck volumes over the next 20 years.

Maldon-Dombarton Rail Link Feasibility Study (2011)

Prepared for the Department of Infrastructure and Transport by Hyder and ACIL Tasman in September 2011 the report considers the feasibility of the potential freight rail link between Maldon (near Picton on the Main South railway line south of Sydney) and Dombarton (near Port Kembla), having regard for project economics, its engineering practicality, its design, cost, environmental and social viability, and the implications of not proceeding.

The Maldon-Dombarton rail connection was commenced, then abandoned, by the NSW Government in the 1980s. It was intended to provide an alternative to the two existing lines for the transport of freight to and from Port Kembla (i.e. the Moss Vale-Unanderra line and the Illawarra line from Sydney). Reasons given for completion of a line included potential increases in freight, road and rail congestion and encouragement of investment.

Most of the ground work for a 35km Maldon-Dombarton line has been constructed, but the expensive elements – a major bridge, part of another major bridge, and a tunnel – have not been constructed. With advances in technology, there are now more cost effective construction techniques for the required bridge and road underpasses.

The report's major findings are:

- The environmental impacts are attenuated because much of the line has already been built. The remaining impacts would require mitigation. None of the environmental issues present significant barriers to construction.
- Construction would take around 3-4 years for a financial cost between $624-667 million. Operating and maintenance costs are relatively minor.
- The main type of freight that the line would be expected to transport is coal from mines near Lithgow and from the Port Kembla hinterland. Other freight includes grain, copper concentrates, limestone, kaolin, cement and potentially iron ore, containers and cars.
- Bulk freight relevant to a Maldon-Dombarton line is expected to grow from 11.6Mtpa in 2010 to 15.5Mtpa in 2030 (coal is respectively 10.4Mtpa and 12.3Mtpa).

- Cars imported through Port Kembla are expected to continue to use road freight to avoid double handling costs.
- Most container freight growth through Port Kembla is required by the NSW Government to move by rail. Container freight could also increase, especially if there is overflow from Port Botany.

Importantly, the report has found that the existing transport system can handle expected demand, and that one of the existing lines (Moss Vale-Unanderra) can be expanded if necessary. Furthermore, the report found that:

- The potential to upgrade the existing Moss Vale-Unanderra line means there is not a capacity problem unless there is an extremely large increase in freight demand. However some trains might have to divert from the Illawarra line and this might need new governance arrangements.
- The main benefits of Maldon-Dombarton relate to increased efficiency for train operators and a net reduction in noise and pollution impacts.
- Arterial roads in the Port Kembla area are congested; however a Maldon-Dombarton line is likely to have little effect on the number of trucks. BHP, a major transporter of coal by truck, does not plan to use the rail line and imported motor vehicles are transported by truck to avoid double handling, and a significant portion of this market is not expected to shift to rail.

From a cost-benefit perspective, the report concludes that it would not be prudent to build extra rail capacity for demand that might not eventuate, or that might eventuate many years later. However, it would be prudent to preserve the rail easement to maintain the option of constructing a Maldon-Dombarton line.

Notwithstanding the findings of the Hyder-ACIL Tasman report, and having regard for the potential long-term benefits of improved freight access to Port Kembla, a further $25.5 million was allocated by the Federal Government in October 2011 for the preparation of detailed designs for the Maldon-Dombarton project (including civil, structural, geotechnical and track works). Other engineering, operational and environmental investigations are also intended.

More recently an EOI process has commenced to test private interest in constructing and operating the line. Again, whilst not directly affecting land in Camden, the potential for further freight infrastructure to service Sydney's south-

west and adjoining regional centres is likely to impact the level of demand for industrial land across the broader region.

Final Report - Visitor Economy Taskforce (2012)

In June 2011 the NSW Government established the Visitor Economy Taskforce and charged it with developing a strategy to double overnight visitor expenditure to NSW by 2020.

The Taskforce's report outlines the current facts on tourism performance, the challenges that lie ahead and the key actions that will be required to generate the business turnaround necessary to achieve the Government's stated goal.

The report provides a relevant example of an across-the-board approach to industry development that is aimed to benefit a specific industry sector but with broader implications for the state of NSW. Its initiatives include specific recommendations for regional NSW and include:

- **Target markets:** All marketing and promotional resources need to be focussed on the priority markets and be informed by the latest market insights on what appeals to visitors.
- **Destination Management Planning:** A new culture and process of Destination Management Planning must be implemented for NSW. This will require an integrated approach to product and infrastructure development, positioning, promotion and marketing and will ensure effective delivery of Government support (at all levels).
- **Regions:** Marketing must focus on, and showcase, the most appealing NSW destinations. Quality experiences and events are required to drive major regional destination re-launches.
- **Destination NSW:** Additional funding is required for Destination NSW to put in place initiatives to deliver on the 2020 visitor economy target. Destination NSW should have the operational flexibility to be commercially effective and provide a one-stop shop for visitor economy investors.
- **Regional support:** Funding for regional tourism should be at least maintained, which should be directly available to destinations through Destination NSW.

- **Revenue source for regional destinations:** A new sustainable source of revenue, derived from a special rate variation for investment in visitor economy initiatives, should be available to Local Councils. Destinations should be able to invest this revenue in critical visitor infrastructure and experience development activities necessary to achieve the 2020 target, subject to full transparency, accountability and governance requirements through new special purpose entities.
- **Governance:** A Cabinet sub-committee should oversee the progress of visitor economy priorities of Government.
- **Joint Visitor Economy Action Plan Co-ordination Committee:** A joint Government/Industry Co-ordination Committee should be established to support Destination NSW's implementation of the Visitor Economy Action Plan.

NSW Long Term Transport Master Plan (2012)

Released in December 2012 the Transport Master Plan is an overarching framework intended to guide subsequent and more detailed transport plans, policy decisions, reforms and funding decisions.

The Plan identifies a planned and coordinated set of actions (reforms, service improvements and investments) to address the state's key transport challenges. It provides a map of future service and infrastructure developments which future decisions will be required to support.

The Long Term Transport Master Plan will be supported by dedicated Regional Transport Plans for each of NSW's 10 regions. These will detail the transport challenges and solutions for each region. Specific strategies are also being developed to improve regional and interstate connections: a NSW Roads Strategy, a Country Passenger Rail Services Strategy and a Major Airports Plan.

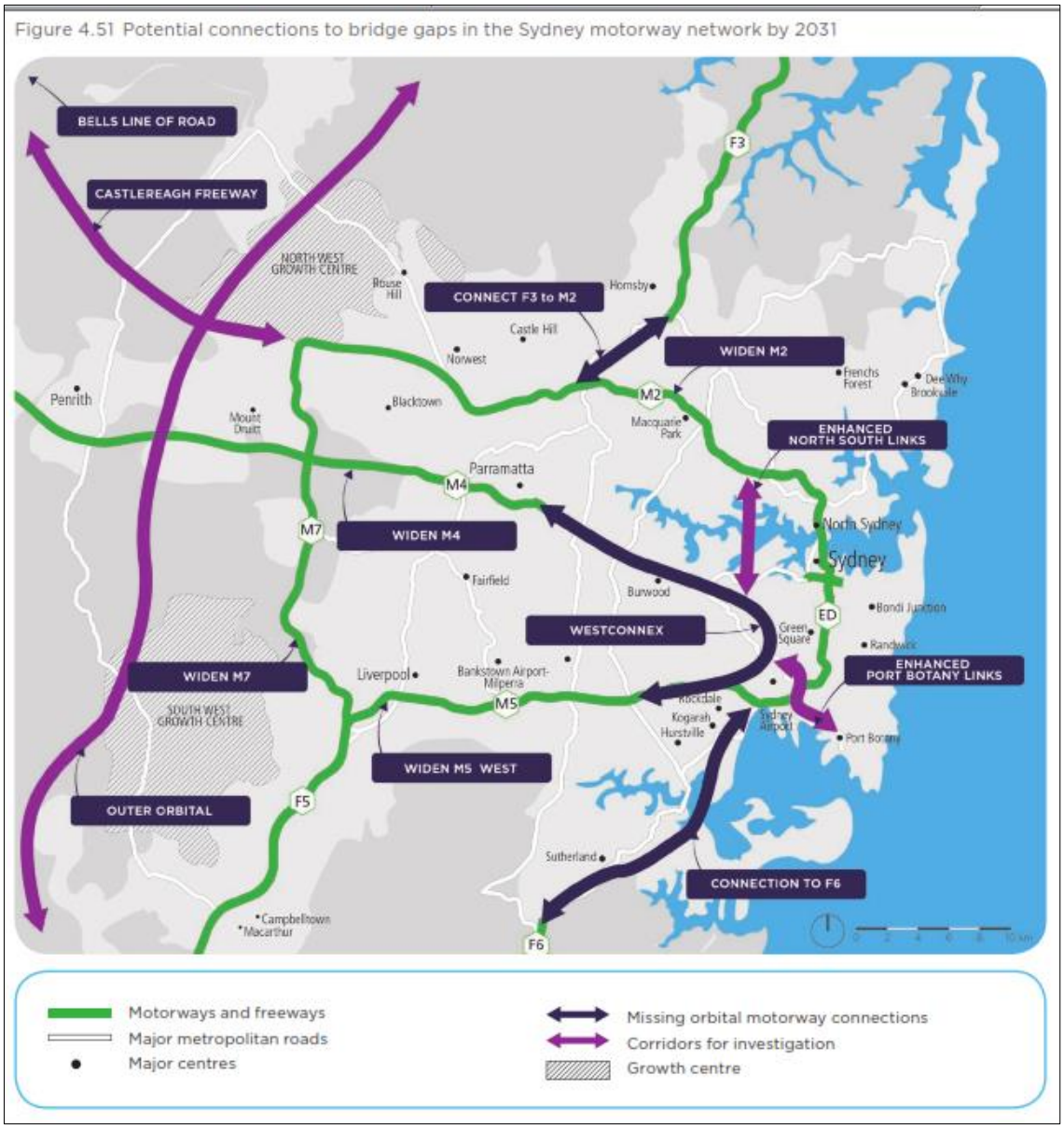
Specifically, identified projects and initiatives that will impact of the attractiveness of industrial land in Camden include:

- The South West Rail Link which will expand Sydney's heavy rail network, better connecting new residents of the SWGC to employment and other city locations.

- WestConnex, the MW widening and upgrades to Camden Valley Way – either completed, underway or committed in current budgets, these roads will significantly improve the connectivity of Sydney's south-west.
- The Erskine Park Link Road, recently completed, will unlock development potential in the Western Sydney Employment Area.
- Planned bus priority route investigations for Leppington to Camden via Oran Park.
- The Western Sydney Employment Area arterial road network which includes a program of road enhancements including the Erskine Park Link Road, an upgrade of Old Wallgrove Road and construction of the Southern Link Road to provide north-south and east-west access to Horsley Park, Eastern Creek and Kemps Creek.
- Preservation of a future corridor for the Outer Sydney Orbital (the M9).

Intended long term intentions to improve Sydney's arterial road network are identified under the strategy and illustrated below.

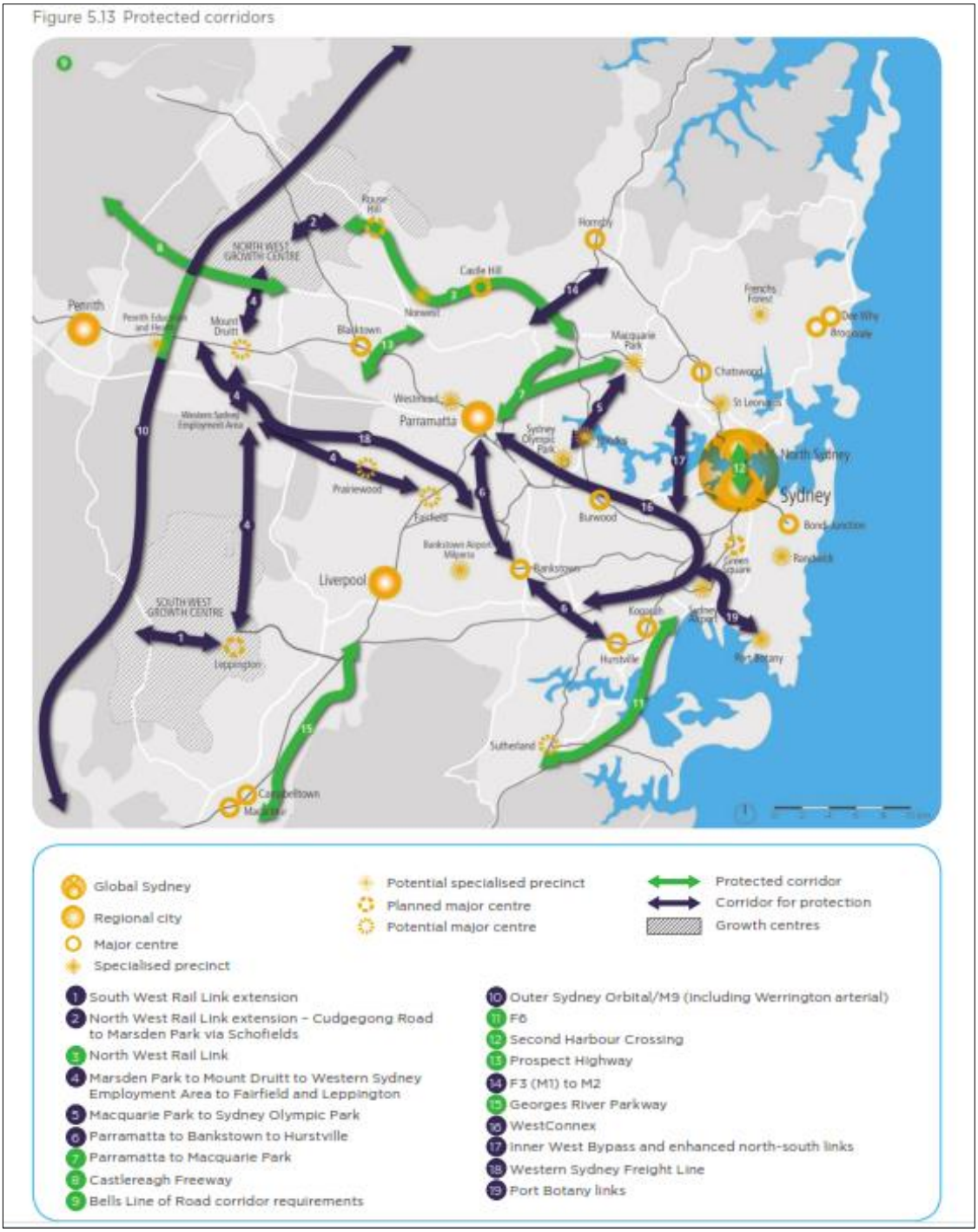
Figure 21. Potential Sydney Motorway Connections (to 2031)



Source: NSW Long Term Transport Master Plan 2012

These intentions are further 'protected' through the identification of key strategic linkages, as identified in the following extract.

Figure 22. Sydney Protected Corridors



Source: NSW Long Term Transport Master Plan 2012

The Master Plan is dedicated to supporting efficient and productive freight. Identified issues include:

- Recognition that NSW's diverse economy means that, while some industries share common transport needs (such as the need to move large volumes of heavy freight along particular routes), others have specific needs that may require fit-for-purpose infrastructure.
- Recognition that freight is particularly critical to the economic development of regions, facilitating the production of goods best suited to specific regions, and enabling larger scale production than would otherwise occur.
- Understanding that to be efficient and effective, and to meet the needs of freight customers, the freight network must operate as a series of integrated end-to-end supply chains. Inefficiencies and poor coordination can arise where there are network disconnections, poor regulation and insufficient capacity. Inefficiencies cause friction and lead to unnecessary costs to industry and consumers.

The Master Plan describes, at a high level, the various needs and 'pinch points' of freight-dependent industries and suggests a number of actions to address these. Relevant to Sydney's south-west are the following actions and initiatives:

- Completion of the Southern Sydney Freight Line.
- The development of a metropolitan network of intermodal terminals that increases the share of freight that is transported by rail.
- The Enfield Intermodal is identified as a short term priority (now completed), as is working with the Australian Government and industry to develop the Moorebank terminal precinct in sync with a road access strategy that does not impact on the M5.
- These intermodal container terminals, located on dedicated freight lines, will each provide around one million additional TEUs of rail capacity per year in the Sydney metropolitan area.
- The longer term development of intermodal terminal facilities at Eastern Creek.
- The undertaking of a pilot of next generation Higher Productivity Vehicle (HPV) access on the Hume Highway (M31), aimed at safely managing

growing freight volumes on NSW's most heavily used road corridor, and improving last mile access for critical freight journeys.

- Develop Port Growth Plans for NSW Ports with the Port Corporations and the new long term lessees of Port Botany and Port Kembla.

Due to expansion at Port Kembla, further rail freight access planning is required to ensure that landside freight connections are improved and enhanced to service this expansion. Rail access to Port Kembla is increasingly constrained, including the Port Kembla branch line servicing the Outer Harbour where the expansion proposal is focused. Also, while the ***Southern Sydney Freight Line*** *work will considerably increase the capacity of rail freight in the south of Sydney, there are capacity constraints on the Illawarra Line for freight travelling to and from Port Kembla.*

NSW Freight and Ports Strategy (2013)

The NSW Government's Freight and Ports Strategy seeks to support economic growth in NSW through the delivery of an efficient and effective freight network.

The expected doubling of the freight task over the next 20 years has provided impetus for a review of freight movements throughout the state and for recent infrastructure project investments including the Port Kembla Outer Harbour expansion project, the Northern Sydney Freight Corridor and continued highway upgrades.

The Strategy identifies a series of actions to achieve network efficiency, capacity and sustainability through government mechanisms including policy reform, program delivery and infrastructure investment.

Key findings and recommendations of the Strategy include:

- By 2031, the freight task in NSW will double to 794 million tonnes.
- The volumes of all commodities demanding capacity on the freight network will grow as population and economic activity increase across NSW. Mining represents almost half the current task.
- Coal will remain the single largest freight task in NSW, followed by manufactured products. The implications of this growth for ports, road and rail networks, intermodal terminals and freight corridors are significant.

Capacity across the freight network varies, but key parts of the network are already under pressure to match demand.

- Opportunities exist to shift more freight onto rail.

By 2031, all key rail corridors are expected to struggle to meet demand unless action is taken. In particular, by 2031 the Sydney metropolitan freight network (MFN) will need to carry around two million TEU, which will equate to approximately 25,000 additional train movements each year.

Of relevance to Camden and south-west Sydney, the Strategy states that:

- Proposed long term corridors such as the Outer Sydney Orbital and Maldon to Dombarton Rail Line are needed to further separate freight and passenger rail movements, in order for both sectors to grow. Separating freight and passengers will continue through dedicated freight infrastructure such as the Southern Sydney Freight Line connecting Macarthur and Port Botany.
- Future corridor design must consider the potential need for a multi-modal outcome involving both road and rail. Increasingly, freight precincts like the proposed intermodal terminals at Moorebank, will support businesses that receive and distribute goods on road and rail.
- Early planning is needed to integrate future transport corridors and sites for new or expanding freight terminals, ... commencing with the dedicated Western Sydney Freight Line and Western Sydney (Eastern Creek) Intermodal Terminal site.
- Transport for NSW is proceeding with pre-construction activities for the Maldon to Dombarton Rail Link, which would support the rapidly expanding resources sector in NSW by giving the mining sector alternate access to Port Kembla.
- Planning for growth in Port Kembla will address the limitations of existing planning approvals by providing increased certainty through integrated planning of port and landside infrastructure needs. This will include, for example, investigation into the potential Maldon to Dombarton Rail Line.

CASE STUDY (13) OUTER SYDNEY ORBITAL CORRIDOR

Proposed long term corridors support freight growth and provide opportunities to move a greater share of freight around the Sydney metropolitan area on rail. Examples of such corridors include the Outer Sydney Orbital, Inland Rail Line, Western Sydney Freight Line and Maldon to Dombarton Rail Line.

The potential for a new Outer Sydney Orbital corridor has been considered for some time as the means to address the significant industrial development occurring in the west of Sydney.

The 2007 Pearlman Review into the F3 to M7 corridor selection recommended that planning work commence to identify a corridor for a future orbital link between the M7 Motorway and F3 Freeway on the Central Coast.

Identifying a new Outer Sydney Orbital corridor and protecting it from incompatible development is an increasingly urgent priority, particularly as the corridor is of key strategic significance to both the road and the rail task.

While the corridor offers the potential to improve mobility between emerging suburbs and employment locations on Sydney's fringe, it is also a key enabler in progressing the separation of the passenger and freight rail networks in the Sydney metropolitan area. The initial driver for a dedicated freight network includes the interstate freight rail task, as this traffic is the most difficult to accommodate within a densely trafficked, metropolitan passenger system (see Action 2C). The movement of coal around Sydney is another potential driver that would facilitate alternatives to the congested Metropolitan Rail Network and, in particular, the Illawarra Line.

Analysis carried out by Infrastructure Australia suggests that a multi-modal corridor from Western Sydney north to the Central Coast and lower Hunter may provide a more effective long term connection between Sydney, the Illawarra and areas to the north.

An adaptive Outer Sydney Orbital corridor would support a new level of integrated transport planning. It would potentially allow four significant modal problems to be resolved through one integrated corridor. An Outer Sydney Orbital would:

- Provide a dedicated rail freight line north from Sydney, beyond the current Northern Sydney Freight Corridor Project
- Identify and reserve a corridor for the new orbital road link
- Provide a Western Sydney Freight Line
- Provide a corridor for an Inland Rail Route.

An additional consideration is that it may be possible for energy and water infrastructure to use this corridor, where it is sensible to do so.

Source: NSW Freight and Ports Strategy 2013

CASE STUDY 16 SUPPORTING THE DEVELOPMENT OF THE MOOREBANK INTERMODAL PRECINCT

The Moorebank precinct has been identified by the Australian and NSW Governments as a key strategic location to increase intermodal capacity. Two intermodal terminals are planned in the precinct; the Moorebank Intermodal Terminal (MIT) has been proposed by the Australian Government for the western side of the precinct, and a privately funded Sydney Intermodal Terminal Alliance (SIMTA) has been proposed for the eastern side. Once complete, these two IMTs are expected to result in up to two million TEU of intermodal terminal capacity.

Transport for NSW expects the development of these two intermodal terminals in the Moorebank precinct to place significant strain on the surrounding local road network. While not all effects of terminal developments have been identified at this time, initial analysis suggests the following impacts to the local road network:

- Travel demand on the section of the M5 Motorway between the Hume Highway at Casula and Moorebank Ave is expected to exceed capacity as early as 2016.
- The absence of west facing ramps from the M5 to the Hume Highway results in a significant number of vehicles using Moorebank Avenue to access the Liverpool CBD.
- By 2026 growth in background traffic will result in peak spreading and traffic conditions similar to the existing peak period in the Liverpool area and on the M5, persisting for most of the day.
- Key intersections providing access to the Moorebank intermodal precinct will exceed capacity with volumes, especially of turning vehicles, resulting in extensive delays, with queuing sufficient to disrupt through movement.

To support the development of the Moorebank intermodal terminals and meet the challenges posed by impact on the local road network, Transport for NSW is seeking to provide road network upgrades. The specific goals of these upgrades include:

- Providing additional capacity and traffic reliability on key routes accessing the precinct.
- Ensuring full access to the precinct for High Productivity Vehicles (HPV), including Higher Mass Limit (HML) vehicles.
- Managing the needs of the precinct in terms of road access while addressing negative externalities for the surrounding community and environment.

Transport for NSW has made a Nation Building 2 submission to undertake modelling and economic analysis to determine the optimal road upgrade package to meet the needs of the developed Moorebank intermodal terminal precinct.

Source: NSW Freight and Ports Strategy 2013

Employment Lands Development Program (ELDP, 2014)

The NSW Government in conjunction with the Department of Planning and Environment produce the ELDP report which outlines the provision of employment lands throughout NSW, with particular emphasis placed on Greater Sydney and its subregions.

The South West Subregion of Sydney comprises the LGAs of Liverpool, Campbelltown, Camden and Wollondilly.

The availability of employment land in Camden and throughout the Sydney South West Subregion is considered in more detail in latter sections of this report.

A Plan for Growing Sydney (2014)

The most current metropolitan strategy, released in December 2014, specifically seeks to encourage and reinforce economic development in western Sydney.

The Strategy notes that:

- almost 70% of jobs on existing industrial land are located in western Sydney;
- the take-up of industrial land has increased 37% since 2012; and that
- more industrial land will be needed to meet future demand.

The strategy identifies the development of the Western Sydney Employment Area (WSEA) as a key initiative that secures ongoing support for manufacturing and industrial activity, particularly in the freight and logistics sector.

The strategy also identifies that Sydney's second airport at Badgerys Creek will be a major stimulus to the Western Sydney economy, broadening the range of job opportunities available to residents. The strategy acknowledges the contribution of the South West Rail Link and planned upgrades to Bringelly Road, The Northern Road, Elizabeth Drive and Camden Valley Way to employment opportunity and improved subregional connection for Sydney's south-west.

Under the metropolitan strategy the Camden LGA is included with Campbelltown, Fairfield, Liverpool and Wollondilly as part of the South West Subregion.

The subregion is identified as the fastest growing subregion in Sydney. The strategy anticipates that the Badgerys Creek Airport as well as Liverpool, Campbelltown-Macarthur, Leppington and the Western Sydney Employment Area will contribute to the growth and diversification of the subregion's economy.

The South West Growth Centre is identified as continuing to play a key role in providing housing and jobs for future residents.

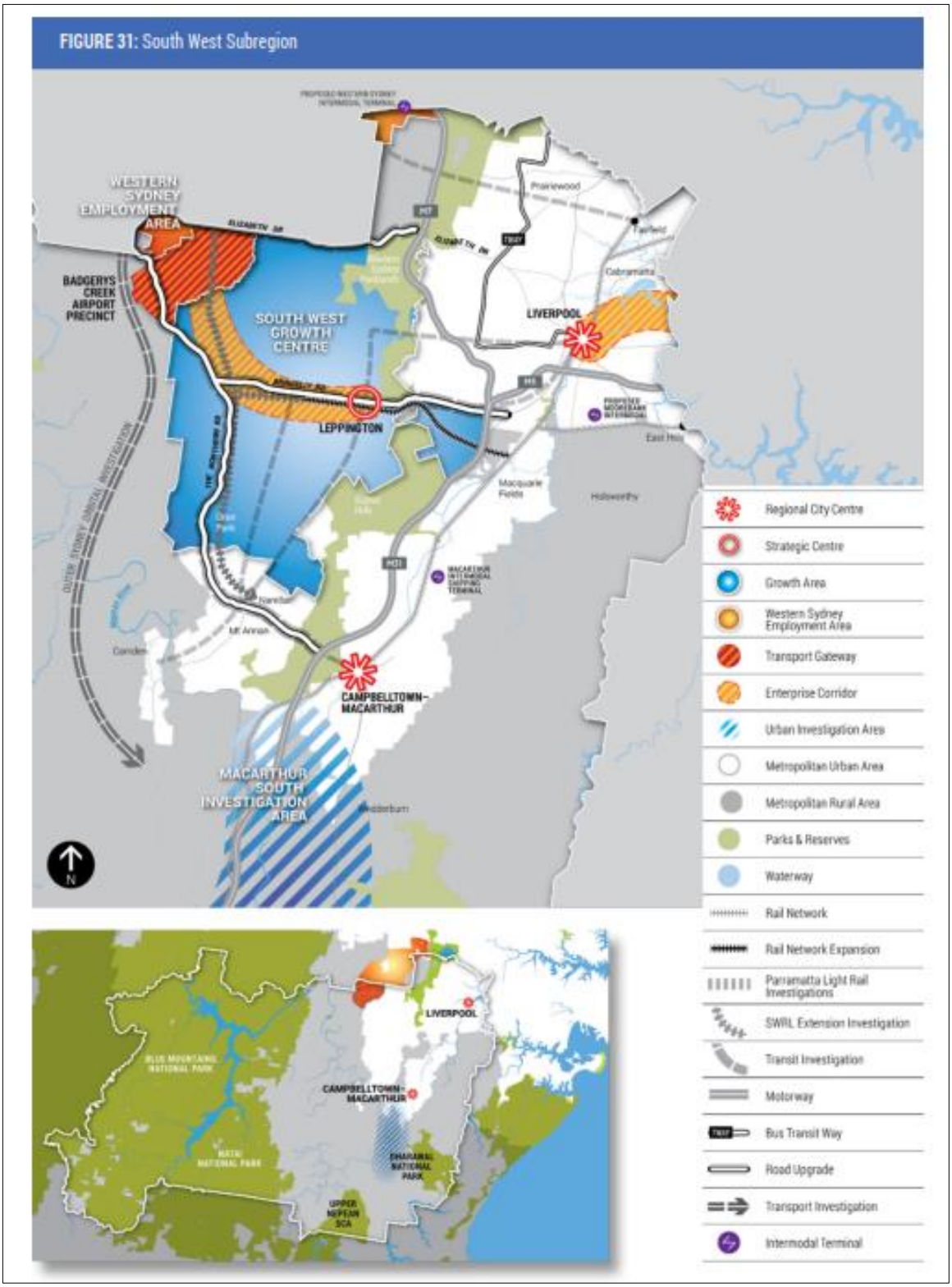
The strategy nominates Campbelltown-Macarthur, Leppington and Liverpool as strategic centres for the subregion. Leppington, situated in the northern part of the Camden LGA is identified as a mixed use centre that will benefit from the new rail station as a centre for employment opportunity.

The strategy also identifies the investigation of potential opportunity, leveraging off improved access to services and jobs, which stems from recent and ongoing improvements to Camden Valley Way.

Of particular relevance to this current study, the strategy nominates the following actions to drive the subregion's competitive economy:

- Investigate the long-term potential to locate a major enterprise corridor between Leppington and Bringelly, linked to the extension of the South West Rail Link.
- Recognise and strengthen the subregion's role in Sydney's manufacturing, construction and wholesale/logistics industries by maximising existing employment lands particularly in Fairfield and Liverpool.
- Identify and protect strategically important industrial-zoned land.
- Strengthen the diverse benefits to the economy proposed by Badgerys Creek Airport.

Figure 23. South West Sydney Subregion



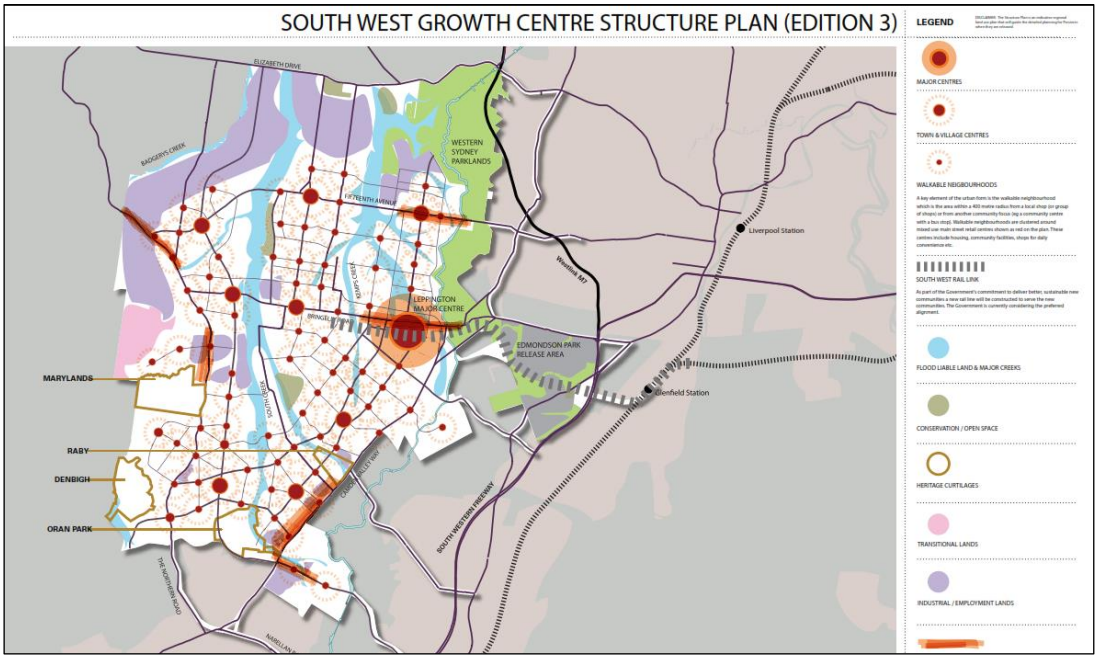
Source: A Plan for Growing Sydney 2014 – South West Subregion

South West Growth Centre

The South West Priority Growth Area spans 17,000ha across the LGAs of Liverpool, Camden and Campbelltown. It is comprised of 18 precincts that are being progressively released for planning and rezoned for urban development.

The SWGC will include a major centre at Leppington, serviced by the recently completed South West Rail Link. SWGC is proposed to accommodate around 110,000 new dwellings for some 300,000 residents, adding significantly to the population base of its constituent LGAs.

Figure 24. South West Growth Centre Structure Plan (2015)

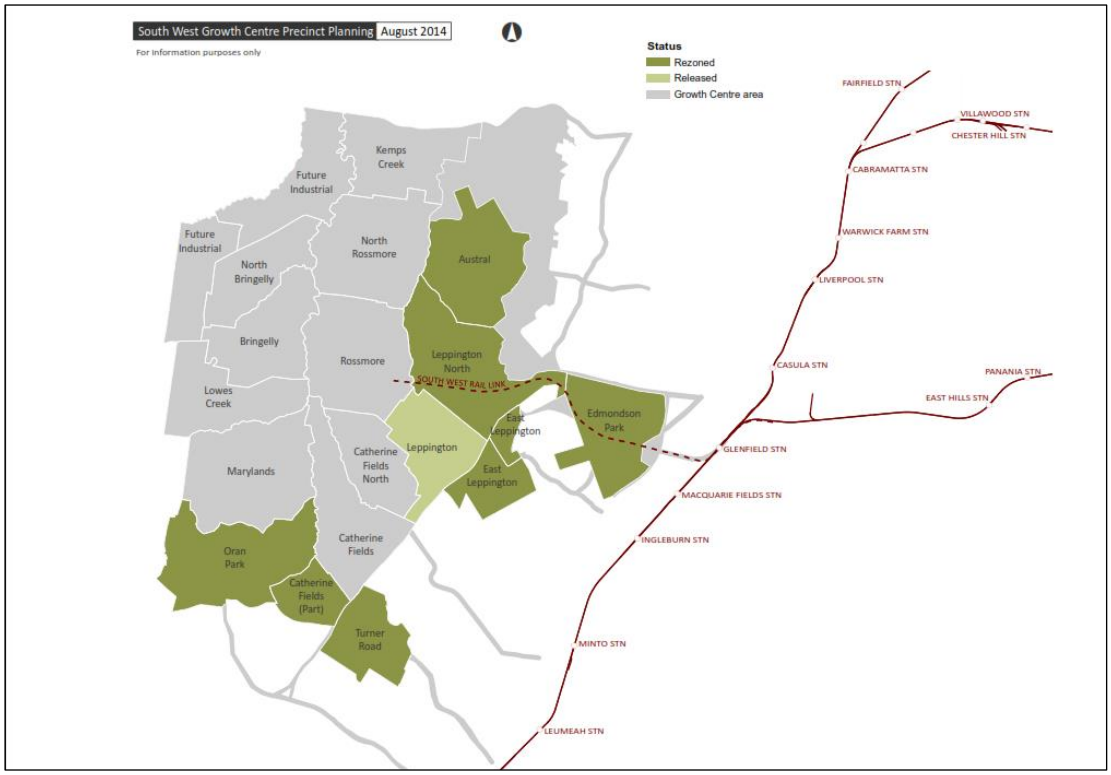


Source: Growth Centres website (http://growthcentres.planning.nsw.gov.au)

Seven precincts within the Growth Centre have been rezoned to allow for urban development. These include Oran Park, Turner Road, Edmondson Park, Austral, Leppington North, Catherine Field (part) and East Leppington. These are depicted on the following map.

Collectively, these precincts have potential for 42,560 homes to accommodate approximately 130,200 residents and provide capacity for 22,120 jobs.

Figure 25. South West Growth Centre – Precinct Status Map (August, 2014)



Source: Growth Centres website (http://growthcentres.planning.nsw.gov.au)

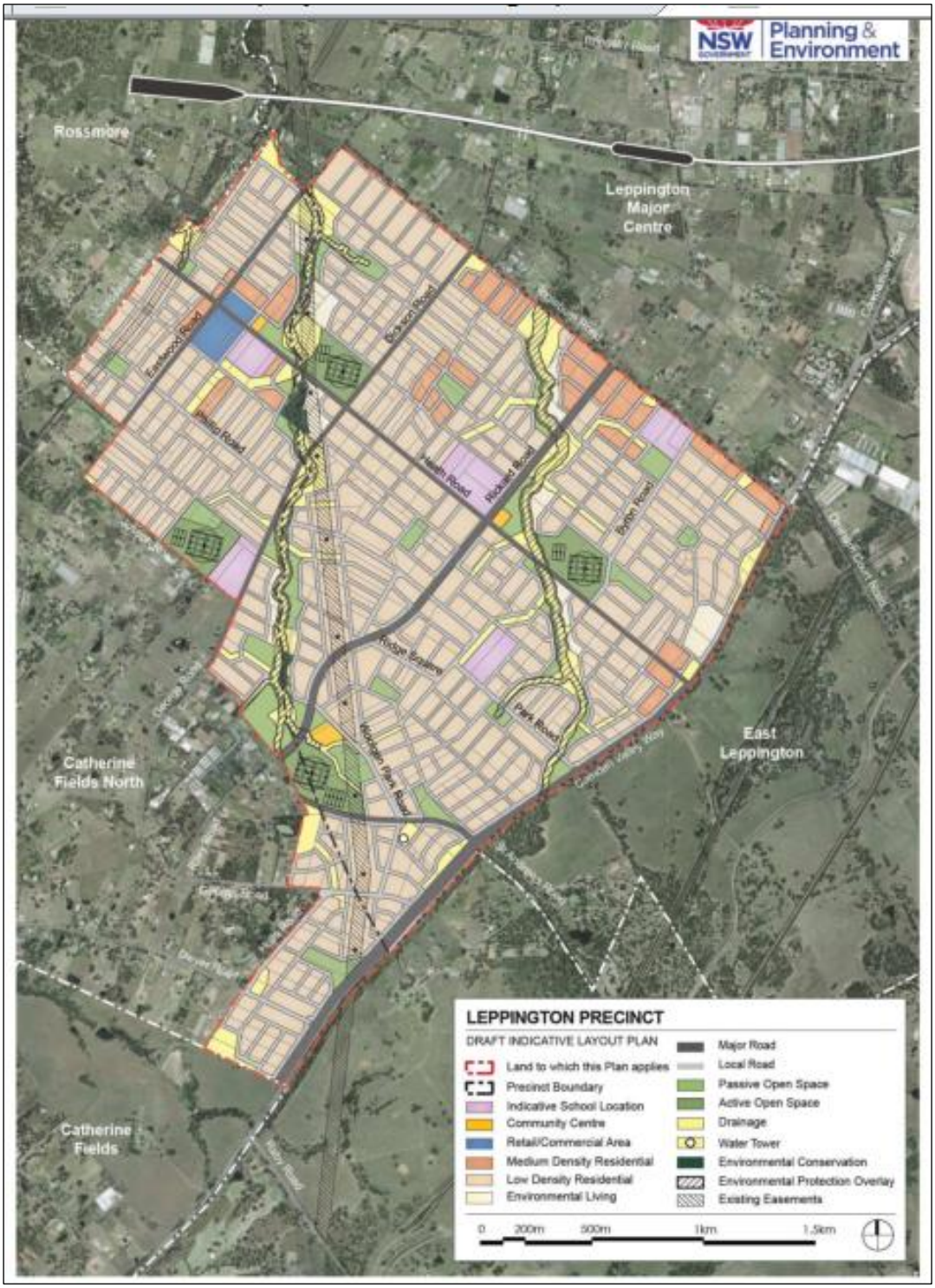
The Leppington Precinct is currently undergoing detailed precinct planning. The planning process has recently been extended to incorporate part of the adjacent Catherine Fields North Precinct.

Overall, the 655ha precinct sits entirely within Camden local government area. It is bounded by Camden Valley Way on the east, Ingleburn Road to the north, and follows lot boundaries and a number of roads along the west including Cordeaux Street, Anthony Road, Joseph Road, and Hulls Road.

Upon rezoning, it is expected the precinct will provide land for approximately 9,000 additional homes and accommodate around 24,000 residents. It will include a 17,000m^2 local retail centre.

The draft Leppington Precinct Plan, as recently exhibited, is provided below.

Figure 26. Draft Leppington Indicative Layout Plan (November, 2014)

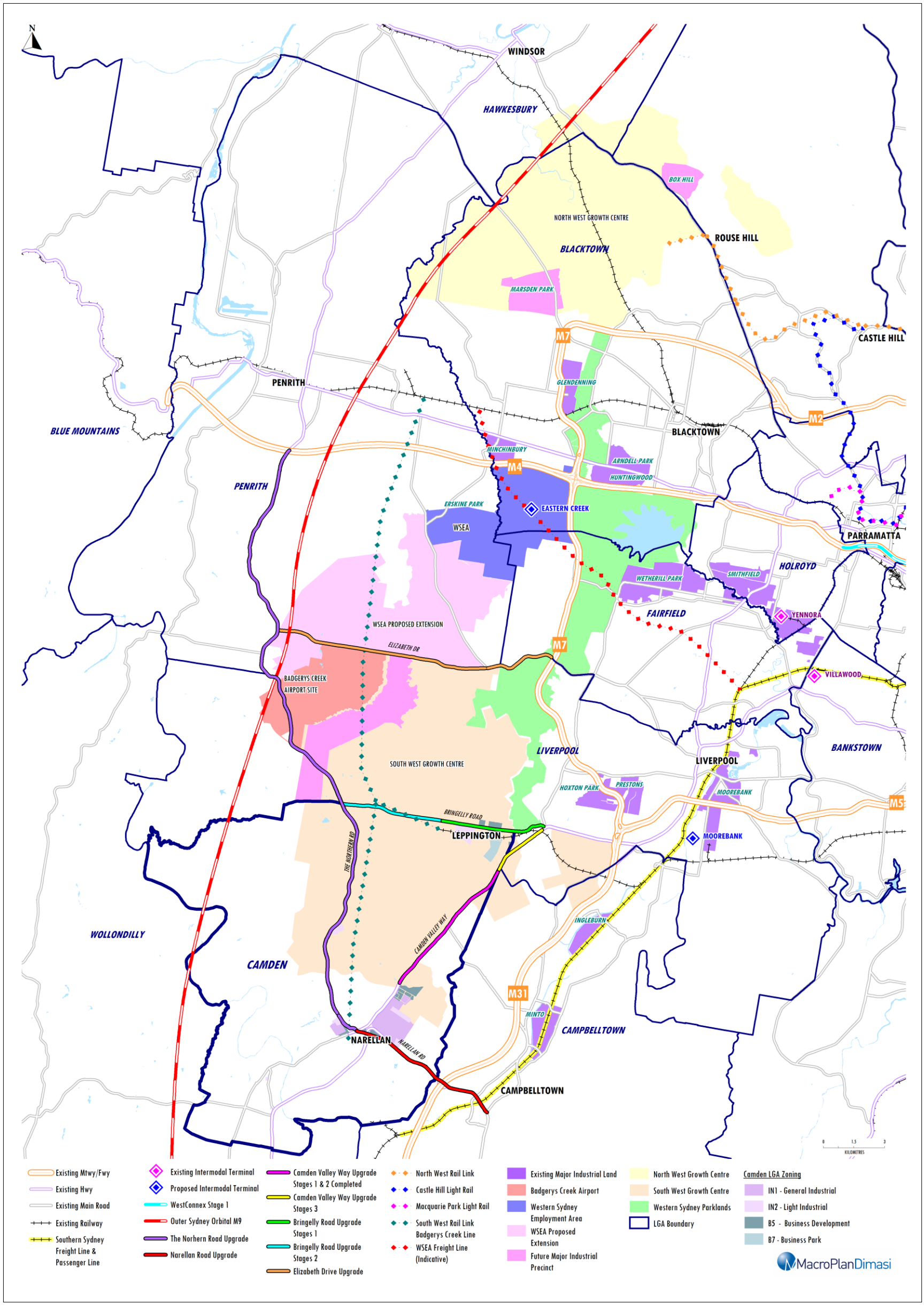


Source: Growth Centres website (http://growthcentres.planning.nsw.gov.au)

It is clear from the South West Growth Centre Structure Plan and the various precincts that have been released and zoned thus far, that the majority of new industrial land within the Camden component of the Growth Centre is located toward its northern boundary and interface with the Liverpool LGA, centred around the new South West Rail Link in the Leppington North precinct.

Further proposed industrial zonings are located at the north-western edge of the Growth Centre, adjacent to the Badgerys Creek Airport and the Western Sydney Employment Area (WSEA).

Appendix B: Infrastructure, Industrial and Travel Zone Overview Maps



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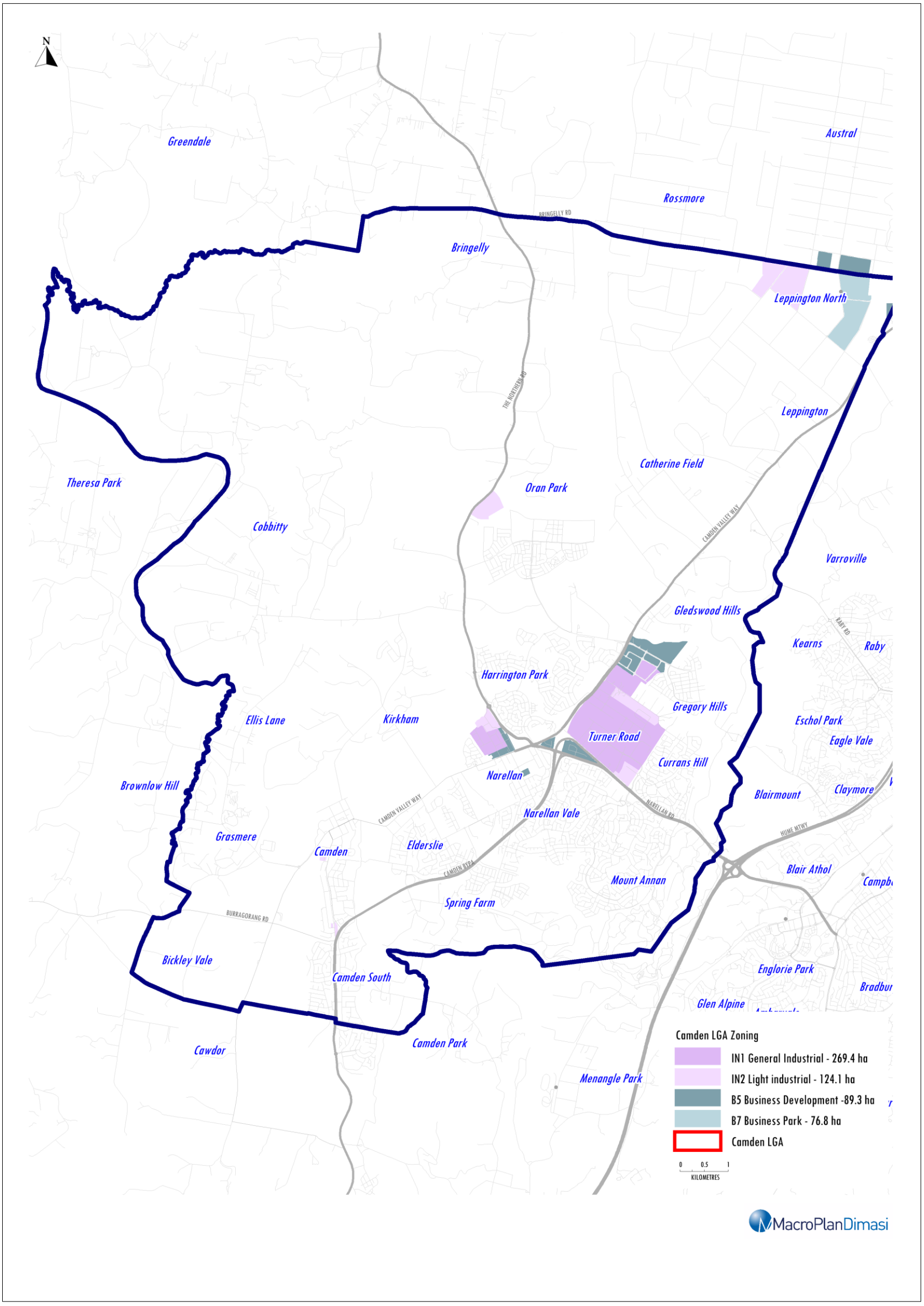
N
Greendale
Austral
Rossmore
BRINGELLY RD
Bringelly
Leppington North
THE NORTHERN RD
Leppington
Catherine Field
Oran Park
Theresa Park
Cobbitty
CAMDEN VALLEY WAY
Varroville
Gledswood Hills
RABY RD
Kearns
Raby
Harrington Park
Gregory Hills
Eschol Park
Kirkham
Ellis Lane
Turner Road
Eagle Vale
Currans Hill
Narellan
Brownlow Hill
Blairmount
Claymore
NARELLAN RD
CAMDEN VALLEY WAY
Narellan Vale
HUME MTWY
Grasmere
Camden
Elderslie
CAMDEN BYPA
Blair Athol
Mount Annan
Spring Farm
BURRAGORANG RD
Bickley Vale
Englorie Park
Camden South
Glen Alpine
Cawdor
Camden Park
Menangle Park
Camden LGA Zoning
IN1 General Industrial - 269.4 ha
IN2 Light industrial - 124.1 ha
B5 Business Development -89.3 ha
B7 Business Park - 76.8 ha
Camden LGA
0 0.5 1
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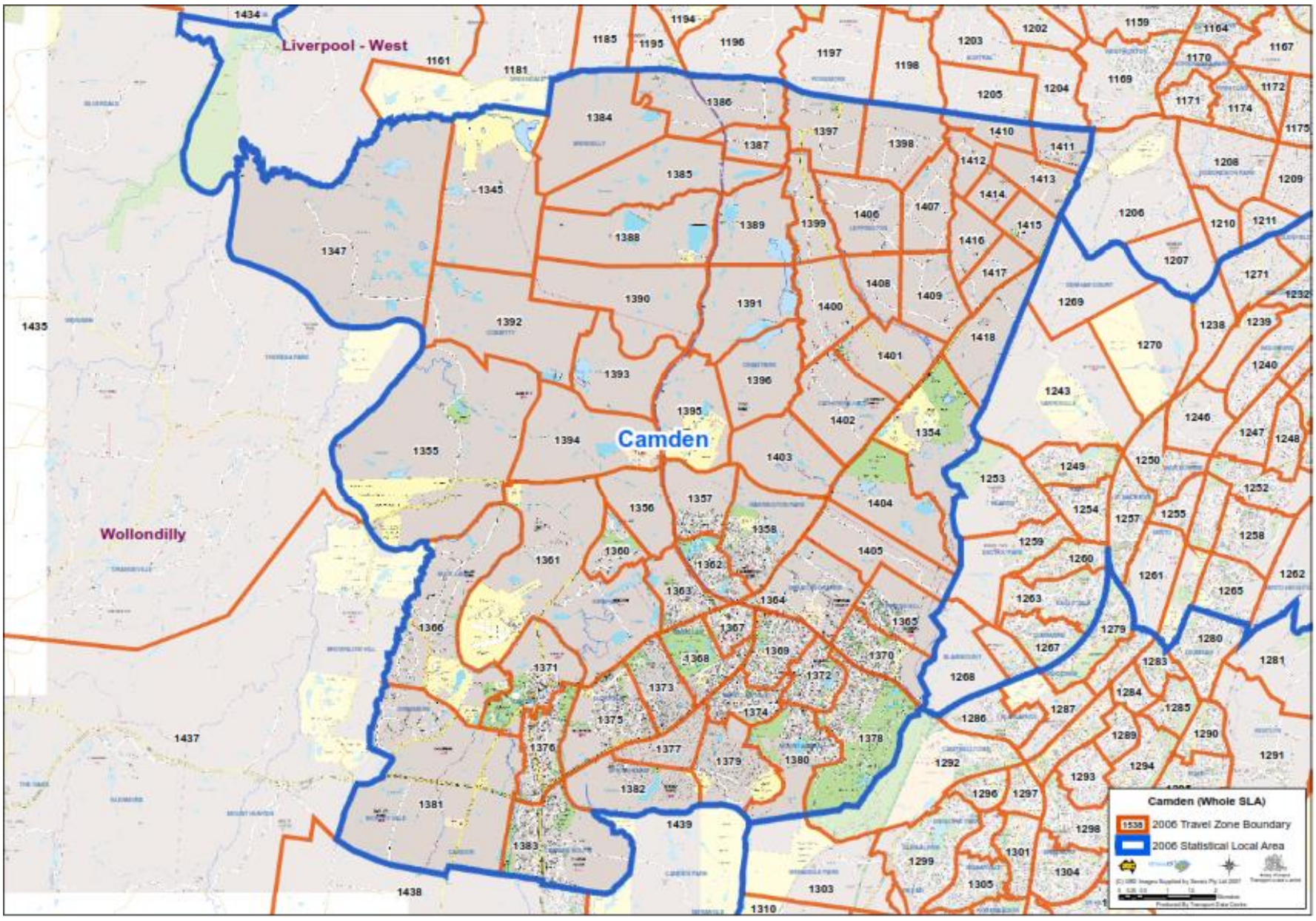

Liverpool - West
Wollondilly
Camden
Camden (Whole SLA)
2006 Travel Zone Boundary
2006 Statistical Local Area

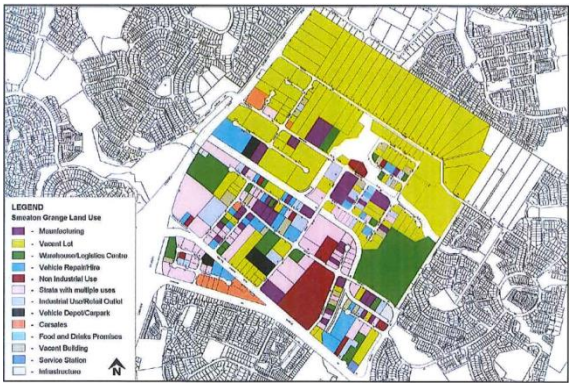
Appendix C: Camden's Industrial Precincts

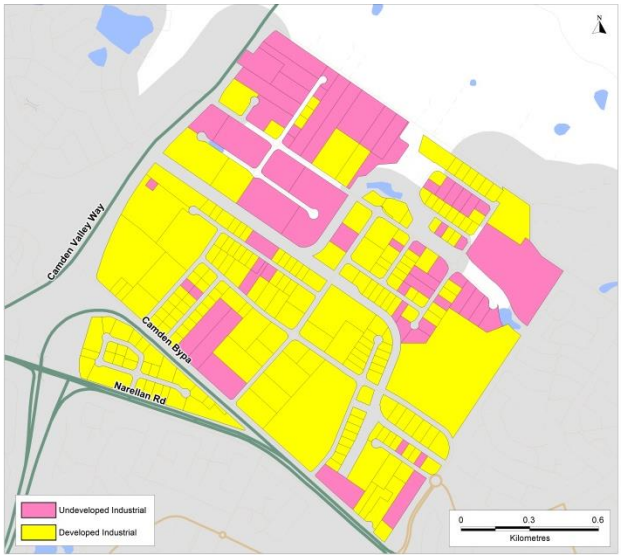
Smeaton Grange

Smeaton Grange is located approximately 60 kilometres south west of Sydney CBD, and is positioned just under 1km north east of the Narellan centre. Land within Smeaton Grange is zoned IN1 (General Industrial) and IN2 (Light Industrial). Lot sizes throughout the estate vary in size providing choice for a range of tenants. The existing mix of uses throughout the precinct is diverse comprising a range of traditional industrial and service activities.

Smeaton Grange has excellent access to M5 Motorway via Narellan Road & M7 Motorway via Camden Valley Way and is also serviced by local buses. The precinct is well positioned to support the needs of the southern portions of the SWGC and the established township of Narellan.

	Smeaton Grange
Total Land Area (Ha)	198.70
Developed Area (Ha)	126.10
Undeveloped Land Area (Ha)	72.60
Undeveloped & Serviced Land Area (Ha)	46.50





Little Street

Little street is a small pocket precinct located south of the Camden Township. Whilst it enjoys access of its western front to Cawdor Road, its eastern access is via residential streets. Much of Little Street remains residentially zoned, impacting potential uses within the precinct.

While the precinct is located only a short distance to the established town centre, there is little connection to the town centre in terms of related land uses or business activities. The precinct is located approximately 7km or 10-minutes' drive from the Smeaton Grange precinct.

	Little Street
Total Land Area (Ha)	2.30
Developed Area (Ha)	2.17
Undeveloped Land Area (Ha)	0.13
Undeveloped & Serviced Land Area (Ha)	0.13

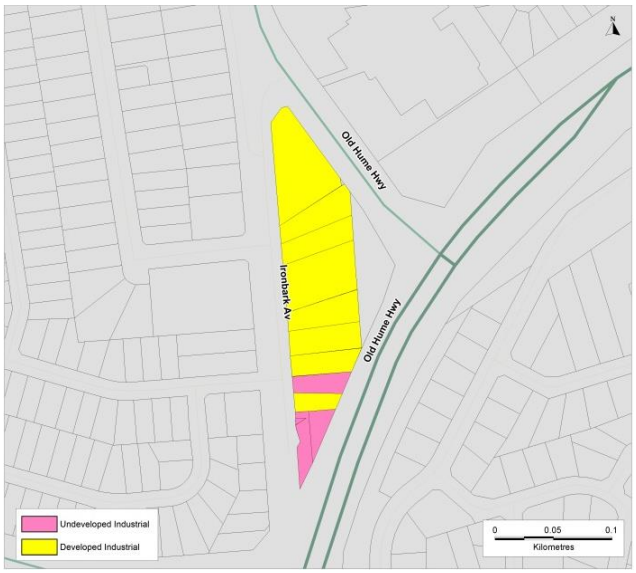
Ironbark Avenue

Ironbark Avenue is zoned IN2 (light Industrial). This precinct, like Little Street, is small, comprising only 1.8 hectares of industrial land. Some industrial uses within the precinct have been replaced with residential services including a veterinary clinic and gymnasium, reflecting the site's central location within a large established residential area.

Recently the tenancy of the estate has been reduced, with the former bus depot site being rezoned to allow for residential development. Whilst the precinct has relatively good access to the Camden Bypass via the Old Hume Highway, past uses such as a car dealership and a caravan sales facility (Fulchers), which would have benefited from this exposure, have ceased operating.

This precinct is located approximately …kms south of the Camden Township.

	Ironbark Avenue
Total Land Area (Ha)	1.80
Developed Area (Ha)	1.61
Undeveloped Land Area (Ha)	0.19
Undeveloped & Serviced Land Area (Ha)	0.19

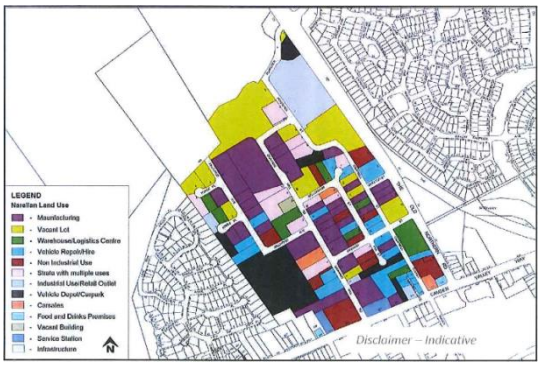


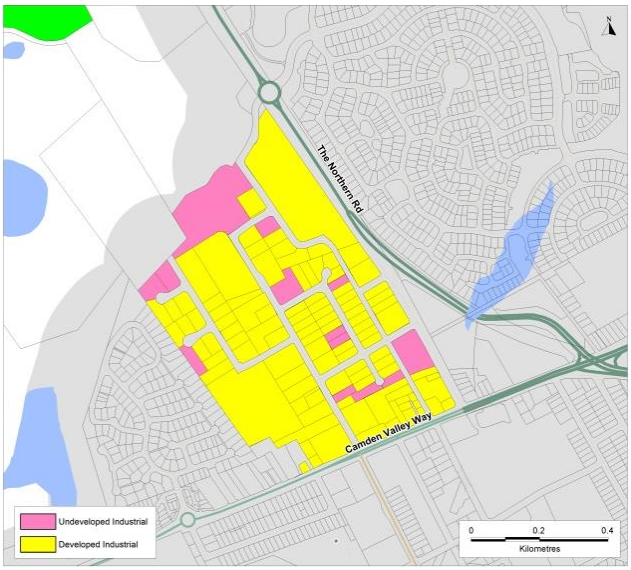
Narellan Industrial

The Narellan Industrial area is located immediately west of the Narellan Town Centre. The precinct benefits from the exposure and accessibility provided by The Northern Road and Camden Valley Way. These locational attributes have driven demand for uses such as the Bunnings Warehouse in the north of the precinct.

The precinct accommodates a diverse mix of industrial and business activities. While most properties within the precinct are generally between 1,500 to 2,000m^2, there are larger lots (including vacant lots) of up to 3.3Ha.

	Narellan
Total Land Area (Ha)	34.40
Developed Area (Ha)	28.70
Undeveloped Land Area (Ha)	5.60
Undeveloped & Serviced Land Area (Ha)	5.60



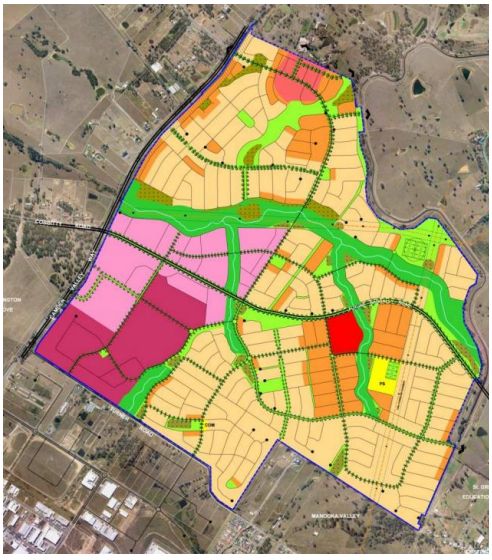


Turner Road

The Turner Road Industrial Precinct is approximately 45ha in area and situated south west of the broader Gregory Hills precinct adjacent to Camden Valley Road. It provides for a range of industrial, light industrial, warehouse and distribution uses. This precinct is located to the north of and adjoining the Smeaton Grange industrial precinct. The estate accommodates a recently completed Masters hardware store.

The Turner Road Business Development Area (light pink in map below) comprises approximately 51Ha and sits adjacent to the industrial zoned land. It provides for a range of business development type activities, including bulky goods retail, business premises, light industry, warehouses and distribution uses. There has been limited development in the precinct so far, with only 2.4Ha of development recorded.

	Turner Road
Total Land Area (Ha)	38.70
Developed Area (Ha)	2.80
Undeveloped Land Area (Ha)	35.90
Undeveloped & Serviced Land Area (Ha)	11.40

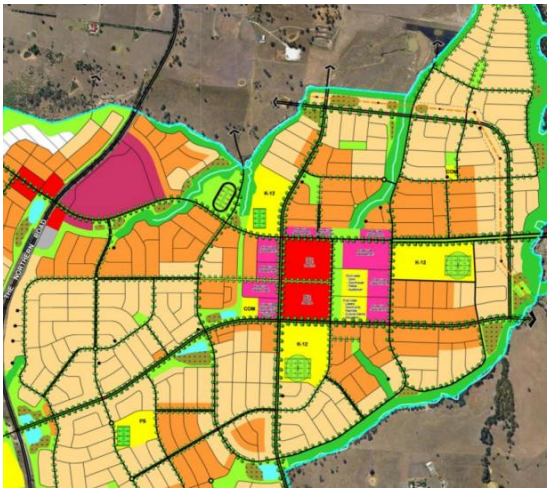


Oran Park

Oran Park, as one of the first precincts released in the SWGC has experienced a relatively high rate of residential development. However, the designated industrial land within the estate is yet to be developed. The precinct has access to The Northern Road, but is also situated at the main western gateway to the Oran Park Town and its surrounding residential uses.

A Business Development area (light pink) nearer to the Oran Park Town Centre has seen some limited development progress, in association with the centre's development.

	Oran Park
Total Land Area (Ha)	18.50
Developed Area (Ha)	0.00
Undeveloped Land Area (Ha)	18.50
Undeveloped & Serviced Land Area (Ha)	18.50

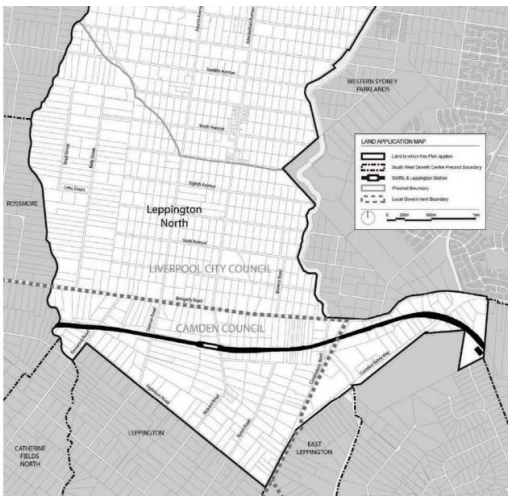


Austral and Leppington North

The Austral and Leppington North precincts sit predominately in the Liverpool City Council area, with a small section of the Leppington North precinct located within the Camden LGA. The Leppington North precinct has 70.8 hectares of employment land designated for development, whilst the Austral precinct has 44.8 hectares.

The Leppington North precinct has access from Camden Valley Way and Bringelly Road. The map below (left) shows the division of the North Leppington precinct into the two local government areas. The coloured map shows that part of the precinct that is located within the Camden LGA and its zoning. The industrial zoned land (light purple) has access from Bringelly Road and is located immediately west of the Leppington Town Centre.

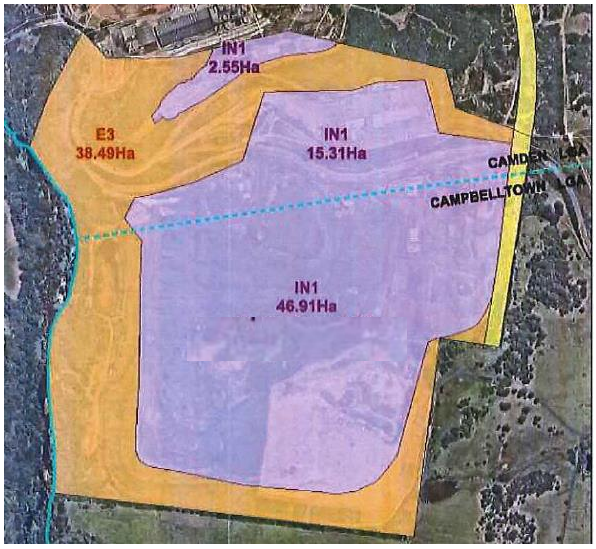
	Leppington North
Total Land Area (Ha)	70.80
Developed Area (Ha)	4.10
Undeveloped Land Area (Ha)	66.70
Undeveloped & Serviced Land Area (Ha)	0.00



Glenlee

Glenlee is positioned in the south-eastern corner of the LGA, adjacent to the Nepean River, immediately south of Mt Annan and east of the Spring Farm residential estates. The site straddles the boundary of the Camden LGA and the Campbelltown LGA. 17.86 hectares of the industrial zoned land sits within the Camden LGA, whilst 46.91 hectares is in the Campbelltown LGA.

The site is comprised of various landholdings involving a range of current activities including SADA Services (which includes a truck maintenance and depot, and a coal washery and reject coal emplacement facility); Camden Soil Mix (truck maintenance and depot, green waste and recycling facility); and TRN (truck maintenance and depot).



Glenlee is listed under the ELDP as having 37.6ha of future employment land in Camden and 112.3ha of future employment land in the Campbelltown LGA.

The site presents further employment capacity additional to its current range of industrial, intermodal, warehousing, bulk terminal and concrete batching land uses.

Appendix D: LEP, DCP & SEPP Comparisons

LEP COMPARISON (Industrial and Business Development Zones)			
CAMDEN LEP 2010	**CAMPBELLTOWN (Draft LEP 2014)**	**LIVERPOOL LEP 2008**	**FAIRFIELD LEP 2013**
B5 – Business Development IN1 – General Industrial IN2 – Light Industrial	B5 – Business Development IN1 – General Industrial IN2 – Light Industrial	B5 – Business Development B6 – Enterprise Corridor IN1 – General Industrial IN2 – Light Industrial	B5 – Business Development B6 – Enterprise Corridor IN1 – General Industrial IN2 – Light Industrial
B5 Zone objectives ▪ To enable a mix of business and warehouse uses, and bulky goods premises that require a large floor area, in locations that are close to, and that support the viability of, centres. ▪ To encourage development that supports or complements the primary office and retail functions of the local centre zone. ▪ To enable other land uses that are complementary to and do not detract from the viability of retail, business and warehouse uses within the zone.	**B5 Zone objectives** ▪ To enable a mix of business & warehouse uses, & bulky goods premises that require a large floor area, in locations that are close to, & that support the viability of, centres. ▪ To build & maintain the economic strength of existing centres by limiting retailing activity & discouraging office development. ▪ To encourage the development & continuation of light industries, & to enable their successful integration & coexistence with other uses permissible within the zone. ▪ To provide for a range of facilities & services to meet the day-to-day needs of workers in the area. ▪ To facilitate diverse and sustainable means of access and movement.	**B5 Zone objectives** ▪ To enable a mix of business and warehouse uses, and bulky goods premises that require a large floor area, in locations that are close to, and that support the viability of, centres. ▪ To maintain the economic strength of centres by limiting the retailing of food and clothing. ▪ To provide for a larger regionally significant business development centre in a location that is highly accessible to the region. ▪ To ensure a reasonable concentration of business activity.	**B5 Zone objectives** ▪ To enable a mix of business and warehouse uses, and bulky goods premises that require a large floor area, in locations that are close to, and that support the viability of, centres. ▪ To encourage the establishment of light industrial uses that are compatible with nearby residential areas, generate employment and contribute to the economic development of Fairfield.

		B6 Zone Enterprise Corridor ▪ To promote businesses along main roads & to encourage a mix of compatible uses. ▪ To provide a range of employment uses (including business, office, retail & light industrial uses). ▪ To maintain the economic strength of centres by limiting the retailing activity. ▪ To provide primarily for businesses along key corridors entering Liverpool city centre, major local centres or retail centres. ▪ To ensure residential development is limited to land where it does not undermine the viability or operation of businesses. ▪ To provide for residential uses, but only as part of a mixed use development.	**B6 Zone Enterprise Corridor** ▪ To promote businesses along main roads & to encourage a mix of compatible uses. ▪ To provide a range of employment uses (including business, office, retail & light industrial uses). ▪ To maintain the economic strength of centres by limiting retailing activity. ▪ To provide for residential uses, but only as part of a mixed use development.
IN1 Zone objectives ▪ To provide a wide range of industrial & warehouse land uses. ▪ To encourage employment opportunities. ▪ To minimise any adverse effect of industry on other land uses. ▪ To support and protect industrial land for industrial uses. ▪ To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area. ▪ To enable non-industrial land uses that are	**IN1 Zone objectives** ▪ To provide a wide range of industrial & warehouse land uses. ▪ To encourage employment opportunities. ▪ To minimise any adverse effect of industry on other land uses. ▪ To support and protect industrial land for industrial uses. ▪ To provide for a range of facilities & services to meet the day-to-day needs of workers in the area. ▪ To enable non-industrial land uses that are	**IN1 Zone objectives** ▪ To provide a wide range of industrial and warehouse land uses. ▪ To encourage employment opportunities. ▪ To minimise any adverse effect of industry on other land uses. ▪ To support & protect industrial land for industrial uses. ▪ To particularly encourage research & development industries by prohibiting land uses that are typically unsightly or	**IN1 Zone objectives** ▪ To provide a wide range of industrial & warehouse land uses. ▪ To encourage employment opportunities. ▪ To minimise any adverse effect of industry on other land uses. ▪ To support & protect industrial land for industrial uses. To ensure development is not likely to detrimentally affect the viability of any nearby business centre.

compatible with & do not detract from the surrounding industrial and warehouse land uses.	compatible with and do not detract from industrial & warehouse uses or impact on the viability of existing centres. ▪ To ensure that any commercial, retail or other non-industrial development is not likely to adversely affect employment generating activities or opportunities. ▪ To facilitate diverse & sustainable means of access and movement.	unpleasant. ▪ To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area.	
IN2 Zone objectives ▪ To provide a wide range of light industrial, warehouse and related land uses. ▪ To encourage employment opportunities and to support the viability of centres. ▪ To minimise any adverse effect of industry on other land uses. ▪ To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area. ▪ To support and protect industrial land for industrial uses. ▪ To enable non-industrial land uses that are compatible with and do not detract from the surrounding industrial and warehouse land uses.	**IN2 Zone objectives** ▪ To provide a wide range of light industrial, warehouse and related land uses. ▪ To encourage employment opportunities and to support the viability of centres. ▪ To minimise any adverse effect of industry on other land uses. ▪ To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area. ▪ To support and protect industrial land for industrial uses. ▪ To enable non-industrial land uses that are compatible with and do not detract from industrial and warehouse uses or impact on the viability of existing centres. ▪ To ensure that any commercial, retail or other non-industrial development is not likely to adversely affect employment generating activities or opportunities. ▪ To facilitate diverse and sustainable means of access and movement	**IN2 Zone objectives** ▪ To provide a wide range of light industrial, warehouse and related land uses. ▪ To encourage employment opportunities and to support the viability of centres. ▪ To minimise any adverse effect of industry on other land uses. ▪ To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area. ▪ To support and protect industrial land for industrial uses. To allow other land uses that are compatible with industry and that can buffer heavy industrial zones while not detracting from centres of activity.	**IN2 Zone objectives** ▪ To provide a wide range of light industrial, warehouse and related land uses. ▪ To encourage employment opportunities and to support the viability of centres. ▪ To minimise any adverse effect of industry on other land uses. ▪ To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area. ▪ To support and protect industrial land for industrial uses. To ensure development is not likely to detrimentally affect the viability of any nearby business centre.

Minimum Lot Size Narellan: 900 – 2000m^2. Smeaton Grange: 2000 – 4000m^2	**Minimum Lot Size** Minto: 4000m^2 Ingleburn: 4000m^2	**Minimum Lot Size** Warwick Farm, Chipping Norton & Moorebank: 2000 – 4000m^2 Moorebank Ave: 4000m^2 Prestons/M7: 2000 – 10,000m^2 M7 Corridor/Prestons: 2000m^2 Casula Enterprise Corridor: 2000m^2	**Minimum Lot Size** Wetherill Park: 930m^2 Lansvale B6 Corridor: No minimum specified
Maximum Building Height Narellan: 9.5 – 11m Smeaton Grange: 11m	**Maximum Building Height** Minto: 12m Ingleburn: 12 – 15m	**Maximum Building Height** 15 – 30m	**Maximum Building Height** 8m in Fairfield East. Elsewhere: Not specified.
Maximum FSR Narellan: 1:1 Smeaton Grange: 1:1	**Maximum FSR** Deferred Matter	**Maximum FSR** Prestons/Hoxton Pk Rd Frontage/Casula Enterprise Corridor 0.75:1 Elsewhere: N/A	**Maximum FSR** N/A

Car Parking Rates Office / Business: ▪ 1 space/40m^2 of GFA ▪ + 1 bicycle & motorcylce space for every 25 car parking spaces in excess of first 25 spaces. Industry / Light Indsutry: ▪ 1 space/70m^2 of GFA ▪ + 1 bicycle & motorcylce space as above Warehouse / Distribution Centre / Storage: ▪ 1 space/300m^2 of GFA ▪ + 1 bicycle & motorcylce space as above ▪ When office space > than 20% of total GFA, office/business premises car parking rates apply to office space component > 20% GFA. Bulky Goods Premises: ▪ 1 space/50m^2 of GFA. ▪ + 1 bicycle & motorcylce space as above	**Car Parking Rates** Industry / Warehouses: ▪ 1 space/35m^2 for office GFA, plus; ▪ For industrial GFA, 2 spaces per unit + 1 space/100m^2 of GFA for buildings up to 2000m^2 or 1 space/250m^2 for buildings > 2000m^2 ▪ + 1 space/300m^2 of outdoor storage space.	**Car Parking Rates** Business Premises: ▪ 1 space/35m^2 of LFA Industry: ▪ 1 space/35m^2 of office LFA ▪ 1 space/75m^2 of factory/warehouse LFA or 1 space/ 2 employees, whichever is greater. Warehouses: ▪ 1 space/35m^2 of office LFA ▪ 1 space/75m^2 of factory/warehouse LFA or 1 space/2 employees, whichever is greater. ▪ Parking requirements can be reduced if lower employee numbers demonstarted.	**Car Parking Rates** Industrial Retail Outlet: ▪ 1 space/50m^2 of GLA. Light Industry: ▪ 1 space /80 - 70m^2 of GLA. Warehouse / Distribution Centre: ▪ 1 space/80m^2 of GLA. Bulky Goods Premises: ▪ 1 space/50m^2 of GLA.
Setbacks IN1 and IN2 – Industrial: ▪ 7.5m front building line. ▪ Side & rear setbacks based on merit & BCA.	**Setbacks** Industrial: ▪ 30m to main roads & railway lines. ▪ 15m to secondary roads.	**Setbacks** B6 & B5 Zones: ▪ Sites with rear lane access – 0m rear setback. ▪ Sites without rear lane access – 5 - 15m rear setback.	**Setbacks** Yennora Precinct: ▪ 5m minimum front setback, of which 1.5m must be landscaped.

B5 – Business Park: ▪ 3m landscape setback to all frontages. Narellan Business Park: ▪ 10m front setback to Narellan Rd, Camden By-Pass or CVW. ▪ 7m front setback to all other roads. ▪ 3m side setback to secondary road frontages. ▪ BCA setbacks for side & rear boundaries. Narellan IN2 Land: ▪ 3m landscape buffer along all boundaries that have an interface with any road. Smeaton Grange: ▪ 15m setback from any spine road of which 10m must be utilised for landscaping; ▪ 10m setback from any minor road of which 5m must be utilised for landscaping; ▪ 30m setback from Camden Valley Way of which 15m must be utilised for landscaping; ▪ 10m to existing alignment of Turner Road of which 10m must be utilised for landscaping; ▪ 10m to the eastern boundary of the Industrial Area of which 10m must be landscaped.		▪ Where a site adjoins a non-residential zone – 0m side setback. ▪ Where a site adjoins a residential zone – merit assessment. Business Development (B5 zone): 15m minimum setback to classified road. 7.5m minimum setback to any other zone.	East Fairfield Precinct: ▪ 5m minimum front setback all of which must be landscaped. Wetherill Park Precinct (main roads): ▪ 20m minimum front setback 10m of wqhich must be landscaped. Wetherill Park Precinct (secondary Roads): ▪ 10m minimum front setback all of which must be landscaped.

Sydney
Level 4
39 Martin Place
Sydney NSW 2000
(02) 9221 5211

Brisbane
Level 15
111 Eagle Place
Brisbane Qld 4000
(07) 3221 8166

Adelaide
Ground Floor
89 King William Street
Adelaide SA 5000
0448 445 177

Gold Coast
Level 2, The Wave
89-91 Surf Parade
Broadbeach Qld 4218
PH: (07) 3221 8166

Perth
Ground Floor
12 St Georges Terrace
Perth WA 6000
(08) 9225 7200

Melbourne
Level 4
356 Collins Street
Melbourne Vic 3000
(03) 9600 0500

MacroPlanDimasi

Appendix 2

Traffic and Parking Report – July 2017

Traffic and Parking Assessment Report

Prepared for: Stoross Pty Ltd

July 2017

Report No: PT16072r01_Final_2

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1. Introduction

This report has been prepared on behalf of Stoross Pty Ltd to present findings of a traffic and parking assessment of the proposed rezoning to permit medical uses at the site known as 2 Ironbark Avenue, Camden.

The study has assessed existing traffic conditions, parking demands, access arrangements, future traffic conditions, service vehicle provision and design compliance.

The remainder of the report is set out as follows:

- Section 2 describes the existing traffic and parking conditions;
- Section 3 summarises the proposed development;
- Section 4 reviews the potential traffic impacts of the proposal; and
- Section 5 presents the conclusions

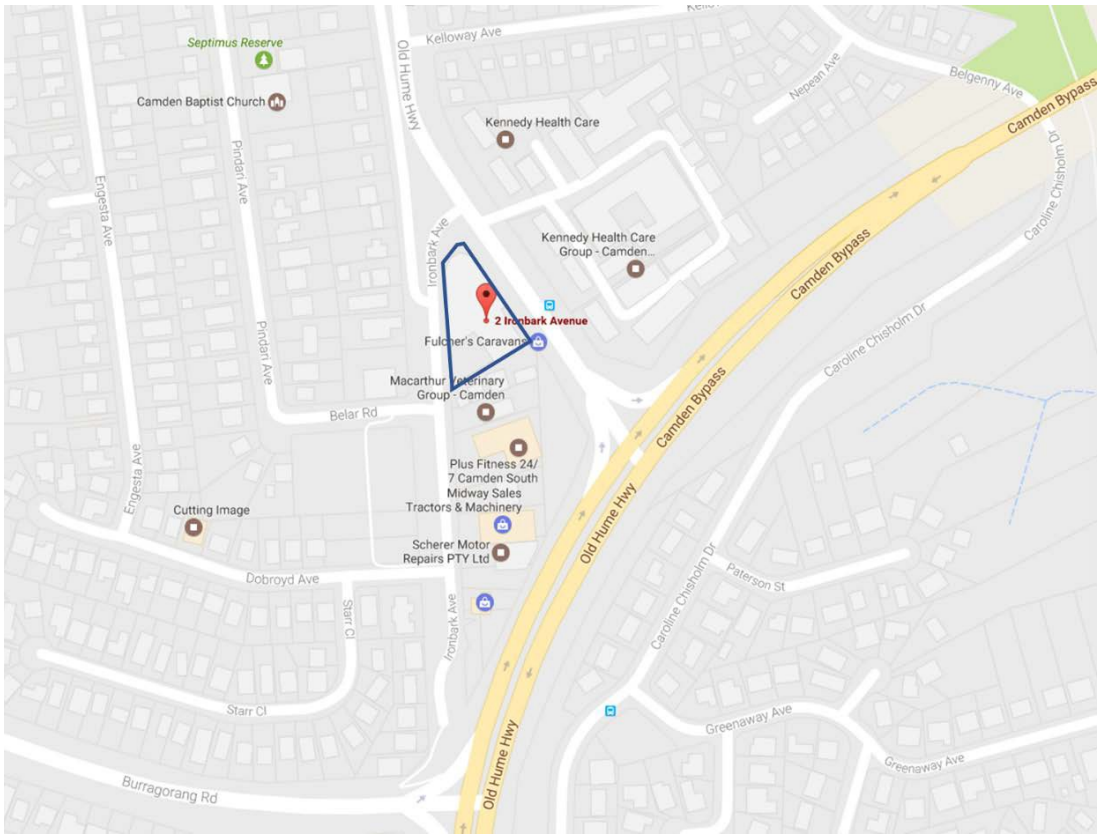
2. Existing Development / Conditions

The following presents a summary of existing site and traffic conditions.

2.1 Site Location

The location of the development site is shown in **Figure 1**.

Figure 1 - Site Location



Source: Google maps

The existing site includes a caravan repair / retail premises which includes a small car park area (eight car spaces undercover) at the rear of the site with entry / exit via Ironbark Avenue. The existing access arrangements are shown below:

Figure 2 – Existing Driveways via Ironbark Avenue

The existing showroom includes a gross floor area of approximately 1,275m^2. The ground floor includes a showroom with the upper floor providing office facilities for the ground floor showroom. At the rear of the site at large workshop is provided with dual garage door access.

2.2 Classification Criteria

It is usual to classify roads according to a road hierarchy in order to determine their functional role within the road network. Changes to traffic flows on the roads can then be assessed within the context of the road hierarchy. Roads are classified according to the role they fulfil and the volume of traffic they should appropriately carry. The RTA has set down the following guidelines for the functional classification of roads.

- Arterial Road – typically a main road carrying over 15,000 vehicles per day and fulfilling a role as a major inter-regional link (over 1,500 vehicles per hour)
- Sub-arterial Road – defined as secondary inter-regional links, typically carrying volumes between 5,000 and 20,000 vehicles per day (500 to 2,000 vehicles per hour)
- Collector Road – provides a link between local roads and regional roads, typically carrying between 2,000 and 10,000 vehicles per day (250 to 1,000 vehicles per hour). At volumes greater than 5,000 vehicles per day, residential amenity begins to decline noticeably.
- Local Road – provides access to individual allotments, carrying low volumes, typically less than 2,000 vehicles per day (250 vehicles per hour).

2.3 Existing Road Network

Ironbark Avenue – is the local street servicing both adjacent residential properties and the small precinct of light industrial developments on the eastern side of the street. The street includes a wide carriageway (approximately 12.0m) and a single travel lane in each direction. The street forms a cul-de-sac at its southern end and includes a posted speed limit of 50km/hr.

Old Hume Highway – is a major north – south collector road through the area. The intersection of Old Hume Highway / Ironbark Avenue is a priority controlled intersection. The street has a posted speed limit of 50km/hr and across the frontage of the site includes two (2) southbound travel lanes and one (1) northbound travel lane. The road provides direct access to the Camden Bypass (main arterial road in the area) at a signalised intersection. An existing pedestrian refuge across Old Hume Highway is located immediately south of the intersection of Old Hume Highway / Ironbark Avenue.

2.4 Existing Site Traffic Generation

As stated above the site includes a caravan workshop / retail premises of which is not included in the RTA Guide to Traffic Generating Developments. A similar type of development would include the 'motor showroom' in the guide.

For a motor showroom the guide suggests an evening peak hour vehicle trips = 0.7 per 100m^2 site area. With an approximate site area of 2,500m^2, this would equate to **18** peak hour trips two way.

2.5 Existing Traffic Flows

A count of AM and PM period traffic flows at the intersection of Ironbark Avenue / Old Hume Highway was undertaken as part of the preparation of this report. A copy of these counts is provided in **Appendix A** of this report.

The peak flows by direction in each street at each intersection are summarised below for a weekday and Saturday conditions.

Table 1 - Existing Weekday Peak Period Volumes in vicinity of site (veh/hr)

		AM		PM	
Road	**Location**	**NB/EB**	**SB/WB**	**NB/EB**	**SB/WB**
Ironbark Avenue	West of Old Hume Highway	89	117	104	143
Old Hume Highway	North of Ironbark Avenue	691	433	680	759
Old Hume Highway	South of Ironbark Avenue	742	456	730	770

From **Table 1** it can be seen that existing flows on surrounding roads are in generally in line with their classification.

2.6 Existing Intersection Operating Conditions Analysis

All intersections surveyed have been analysed using the Sidra Intersection analysis program. Sidra Intersection determines the average delay that vehicles encounter, the degree of saturation of the intersection, and the level of service. The degree of saturation is the ratio of the arrival rate of vehicles to the capacity of the approach. Sidra Intersection provides analysis of the operating conditions which can be compared to the performance criteria set out in **Table 2.**

Table 2 – Level of Service Criteria

Level of Service	Average Delay per Vehicle (secs/veh)	Signals & Roundabouts	Give Way & Stop Signs
A	less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & Spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays Roundabouts require other control mode	At capacity, requires other control mode
F	> 70	Extra capacity required	Extreme delay, traffic signals or other major treatment required

Adapted from RTA Guide to Traffic Generating Developments, 2002.

For roundabouts and priority intersections, the reported average delay is for the individual movement with the highest average delay per vehicle. At signalised intersections, the reported average delay is over all movements.

The existing weekday and weekend day intersection operating conditions are presented in **Table 3.** Average delay is expressed in seconds per vehicle.

Table 3 – Existing Weekday Intersection Operating Conditions

		Morning Peak		Evening Peak	
Intersection	Control	Av Delay	LOS	Av Delay	LOS
Ironbark Avenue / Old Hume Highway	Priority	14.2	B	16.0	B

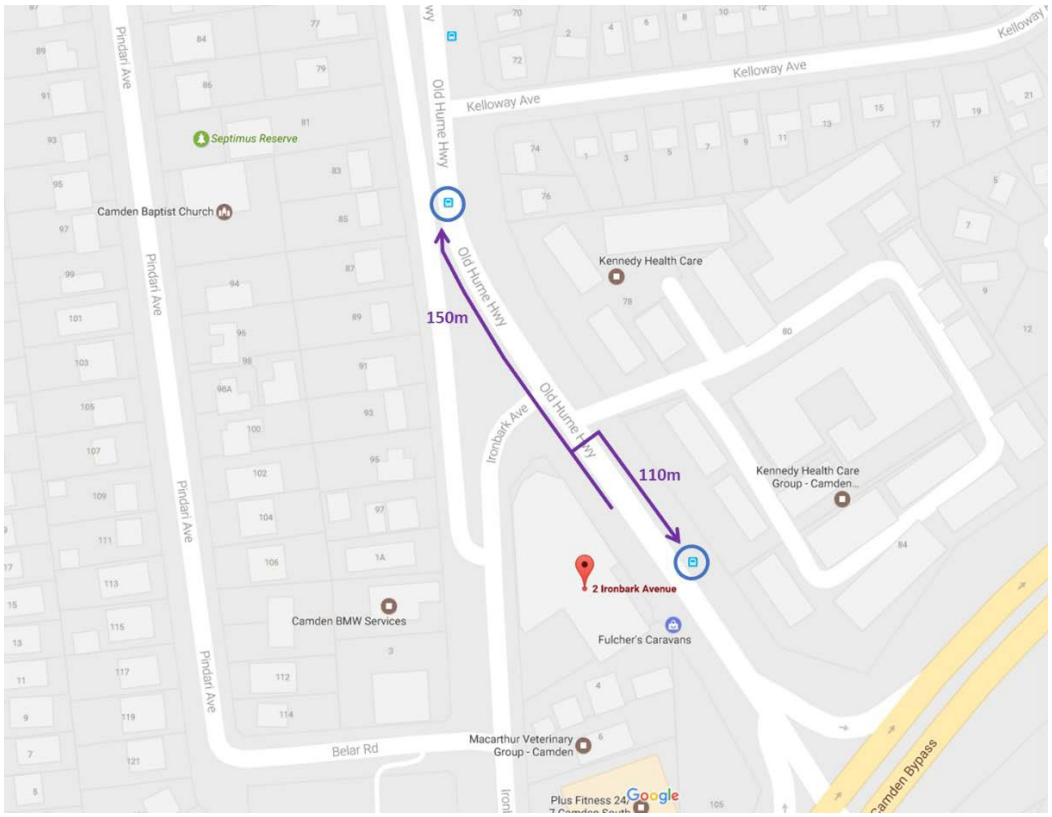
Avg Delay (sec/veh) is over all movements at signals, and for worst movement at priority and roundabouts

From **Table 3**, it can be seen that all intersections in the vicinity of the development site currently operate at a satisfactory level of service with adequate spare capacity for increased demands.

2.7 Public Transport

The site is located within 150m walking distance to an existing northbound bus stop in Old Hume Highway and directly adjacent to a southbound bus stop. The walking distance to each stop is shown below.

Figure 3 – Development Site Proximity to Existing Bus Stops



A description of the available and frequency public transport operations is presented below:

Table 4 - Existing Bus Services in Old Hume Highway

Route Number	Operator	Origin	Via	Destination
49	Busabout	Camden	Razorback	Menangle
894	Busabout	Campbelltown	Razorback	Menangle
894X*	Busabout	Campbelltown	Camden South	Narellan

*Express service

Thus, the development site located within 110-150m walking distance to existing bus stops which provide access to a number of local and regional bus services.

3. The Proposed Development

Whilst the existing site permits retail / warehouse developments with residential developments located along the western side of Ironbark Avenue, the existing zoning does not allow a 'medical centre'.

The proposal includes a request to Council to consider permitting a medical centre at the site applying Clause 5.3 to DA 2015/592/1.

It is anticipated that the medical use would only utilise the existing ground floor of the building. The upper floor office area would not be utilised. The existing ground floor of the building includes some 1275m^2 of floorspace

Based on preliminary measurements of the available parking areas, there is a potential to provide 44 on-site parking spaces within the building and outside parking area. The assumed configuration of the potential parking provision is provided in Appendix B of this report. The layout assumes:

- Stacked car parking for staff for a total of 10 parking spaces (Council may not support stacked staff car parking and we may lose another 6 spaces
- 2.5m wide staff parking spaces (complies)
- 2.6m wide all remaining spaces for the public (complies)
- Compliant aisle widths

The final car park provision would be confirmed at the time of DA submission.

4. Potential Traffic Impacts

4.1 Introduction

The following presents an assessment of the potential traffic impacts of the proposal using the Roads and Traffic Authority Guide to Traffic Generating Developments standard approach.

4.2 Development Traffic Generation

The RTA Guide to Traffic Generating Developments suggest the following traffic generation rates for a medical centre:

"…evening peak period the mean peak vehicle trip generation rate was 8.8 veh/hr/100m' gross floor area, with a range of 3.1-19.4 veh/hr/10Dm'. In the morning period of 9.00 am to 12.00 pm the mean peak vehicle trip generation rate was 10.4 veh/hr/100 m² gross floor area, with a range of 4.4-19.0 veh/hr/100m."

However, it is proposed to use the higher mean rate of 10.4 trips per hour per 100m² for the proposal.

Applying the above rate to the ground floor would equate to an AM peak hour potential traffic generation of 133 vehicles two way. For a conservative estimate of future traffic conditions, the same net traffic generation has been added to the PM peak.

From the counts presented in **Appendix A**, it is noted that the Old Hume Highway included a 40/60% split in the AM peak for northbound / southbound traffic exiting Ironbark Avenue and a similar split in the PM. Therefore, it has been assumed all trips generated by the site would be 40% from the north and 60% from the south. Also, a 50/50 split between inbound and outbound trips in each period.

4.3 Future Traffic Flows

The traffic generated by the proposal has been added to the surrounding road network as per the adopted trip distribution detailed above. The resulting future traffic flows are presented below.

Table 5 – Future Weekday Peak Period Volumes in vicinity of site (veh/hr)

		AM		PM	
Road	**Location**	**NB/EB**	**SB/WB**	**NB/EB**	**SB/WB**
Ironbark Avenue	West of Old Hume Highway	155	183	170	209
Old Hume Highway	North of Ironbark Avenue	731	473	720	785
Old Hume Highway	South of Ironbark Avenue	782	482	770	810

From **Table 1** it can be seen that existing flows on surrounding roads are in generally in line with their classification.

4.4 Future Intersection Operation

The future traffic flows on the surrounding road network have been assessed in SIDRA. The resulting future intersection operation is presented below.

Table 6 – Future Weekday Intersection Operating Conditions

Intersection	Control	Morning Peak		Evening Peak	
		Av Delay	LOS	Av Delay	LOS
Ironbark Avenue / Old Hume Highway	Priority	15.4	B	17.4	

Avg Delay (sec/veh) is over all movements at signals, and for worst movement at priority and roundabouts

From **Table 6** it can be seen that at full development of the development site, all intersections surveyed would continue to operate at satisfactory levels of service.

Overall the potential traffic impacts of the development are considered satisfactory.

4.5 Development Parking Requirements

Off street parking would be provided in accordance with the Camden's DCP requirements which requires 4 spaces per 100m^2 gross floor area for a medical centre.

The showroom area incorporates approximately 1,275m^2 of floor space and therefore the use of the showroom area for a medical centre would require provision of a total of 51 parking spaces.

As stated above, there is the potential to provide a total of 44 on-site parking spaces in the configuration as shown in **Appendix B** of this report. Thus, applying Council's DCP rate to the potential medical centre floorspace would result in an overflow of seven (7) parking spaces.

Given the location of the site and the availability of on-street parking the overflow of seven (7) vehicles would not be a major issue on parking availability in Ironbark Avenue. The frontage of the medical centre in Ironbark Avenue is in the order of 100m and would more than cater for the potential seven (7) overflow parked vehicles. The frontage parking does not provide any benefit to adjacent developments which include a car sales yard.

Use of the property for the operation of a medical centre shall occupy only the ground floor showroom area. The upper floor offices shall not be used in association with the operation of the medical centre.

The workshop area shall only be used for car parking in association with the medical centre.

5. Conclusions

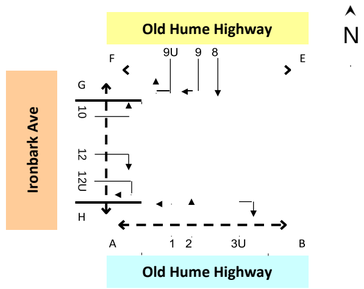
This report has reviewed the potential traffic impacts of the proposed rezoning to permit a medical centre at the site known as 2 Ironbark Avenue, Camden. The findings of this review are presented below:

1. The intersection of Ironbark Avenue / Old Hume Highway currently operates at a satisfactory level of service in both peak periods.
2. A medical centre utilising the ground floor of the existing building would generate some 133 additional peak hour trips two way through the intersection of Ironbark Avenue / Old Hume Highway.
3. The intersection of Ironbark Avenue / Old Hume Highway would continue to operate at a satisfactory level of service in the future.
4. The site is located within 110-150m of existing bus stops / services which operate along the Old Hume Highway.
5. The site would require a total of 51 parking spaces on the basis the ground floor area is used as a medical centre facility.
6. There is the potential to provide a total of 44 on-site parking spaces within the development.
7. The potential overflow of seven (7) vehicles would more than be catered for in Ironbark Avenue along the frontage of the development without any impact on adjacent developments.

Overall the traffic impacts of the proposal are considered acceptable.

6. Appendix A – Intersection Count

Job No.	: N2913
Client	: Positive Traffic
Suburb	: Ironbark Ave
Location	: 1. Old Hume Highway / Ironbark Ave
Day/Date	: Thur, 8th December 2016
Weather	: Fine
Description	: Classified Intersection Count
	: 15 mins Data



Classifications	**Class 1**	**Class 2**	**Class 3**
	Lights	Heavies	Buses

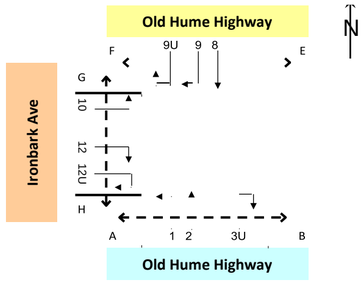
Approach	**Old Hume Highway**											
Direction	**Direction 1 (Left Turn)**				**Direction 2 (Through)**				**Direction 3U (U Turn)**			
Time Period	**Lights**	**Heavies**	**Buses**	**Total**	**Lights**	**Heavies**	**Buses**	**Total**	**Lights**	**Heavies**	**Buses**	**Total**
6:30 to 6:45	7	0	0	**7**	82	3	2	**87**	0	0	0	**0**
6:45 to 7:00	11	1	0	**12**	110	3	2	**115**	0	0	0	**0**
7:00 to 7:15	11	0	0	**11**	99	3	5	**107**	0	0	0	**0**
7:15 to 7:30	9	0	0	**9**	101	0	4	**105**	0	0	0	**0**
7:30 to 7:45	8	0	0	**8**	84	2	4	**90**	0	0	0	**0**
7:45 to 8:00	16	0	0	**16**	138	1	0	**139**	0	0	0	**0**
8:00 to 8:15	13	0	0	**13**	132	3	2	**137**	0	0	0	**0**
8:15 to 8:30	13	0	0	**13**	180	7	2	**189**	0	0	0	**0**
8:30 to 8:45	27	0	0	**27**	166	2	7	**175**	0	0	0	**0**
8:45 to 9:00	22	0	0	**22**	152	3	1	**156**	0	0	0	**0**
9:00 to 9:15	24	0	0	**24**	132	4	0	**136**	0	0	0	**0**
9:15 to 9:30	19	1	0	**20**	100	0	0	**100**	0	0	0	**0**
AM Totals	**180**	**2**	**0**	**182**	**1,476**	**31**	**29**	**1,536**	**0**	**0**	**0**	**0**
15:00 to 15:15	18	0	0	**18**	132	2	0	**134**	0	0	0	**0**
15:15 to 15:30	17	0	0	**17**	106	3	4	**113**	0	0	0	**0**
15:30 to 15:45	20	2	0	**22**	129	1	1	**131**	0	0	0	**0**
15:45 to 16:00	28	2	0	**30**	120	1	1	**122**	0	0	0	**0**
16:00 to 16:15	19	0	0	**19**	117	3	0	**120**	0	0	0	**0**
16:15 to 16:30	28	0	0	**28**	116	1	3	**120**	0	0	0	**0**
16:30 to 16:45	19	0	0	**19**	141	2	3	**146**	0	0	0	**0**
16:45 to 17:00	24	0	0	**24**	137	4	2	**143**	0	0	0	**0**
17:00 to 17:15	21	0	0	**21**	156	0	1	**157**	0	0	0	**0**
17:15 to 17:30	20	1	0	**21**	143	1	1	**145**	0	0	0	**0**
17:30 to 17:45	18	2	1	**21**	172	1	1	**174**	0	0	0	**0**
17:45 to 18:00	25	1	0	**26**	162	1	2	**165**	0	0	0	**0**
18:00 to 18:15	13	2	0	**15**	100	3	3	**106**	0	0	0	**0**
18:15 to 18:30	18	0	0	**18**	126	1	1	**128**	0	0	0	**0**
18:30 to 18:45	16	0	0	**16**	139	2	0	**141**	0	0	0	**0**
18:45 to 19:00	13	0	0	**13**	113	0	1	**114**	0	0	0	**0**
PM Totals	**317**	**10**	**1**	**328**	**2,109**	**26**	**24**	**2,159**	**0**	**0**	**0**	**0**

Approach	Old Hume Highway												Ironbark Ave								Crossing Pedestrians									
Direction	Direction 8 (Through)				Direction 9 (Right Turn)				Direction 9U (U Turn)				Direction 10 (Left Turn)				Direction 12 (Right Turn)				Direction 12U (U Turn)									
Time Period	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	A	B	E	F	G	H	Total
6:30 to 6:45	53	2	0	**55**	0	0	0	**0**	0	0	0	**0**	5	0	0	**5**	10	0	2	**12**	0	0	0	**0**	0	0	0	0	0	0	**0**
6:45 to 7:00	65	1	0	**66**	4	0	0	**4**	0	0	0	**0**	4	0	0	**4**	11	2	0	**13**	0	0	0	**0**	0	0	0	0	0	0	**0**
7:00 to 7:15	77	1	3	**81**	3	1	0	**4**	0	0	0	**0**	4	0	0	**4**	13	0	0	**13**	0	0	0	**0**	0	0	0	0	0	0	**0**
7:15 to 7:30	86	3	1	**90**	3	0	0	**3**	0	0	0	**0**	8	0	0	**8**	8	0	0	**8**	0	0	0	**0**	0	0	0	0	0	0	**0**
7:30 to 7:45	73	2	1	**76**	3	0	0	**3**	0	0	0	**0**	13	0	0	**13**	11	0	0	**11**	0	0	0	**0**	0	0	0	0	0	0	**0**
7:45 to 8:00	81	0	1	**82**	4	1	0	**5**	0	0	0	**0**	15	0	0	**15**	14	0	0	**14**	0	0	0	**0**	0	0	0	0	0	0	**0**
8:00 to 8:15	78	2	0	**80**	8	0	0	**8**	0	0	0	**0**	12	2	0	**14**	17	1	0	**18**	0	0	0	**0**	0	0	0	0	0	0	**0**
8:15 to 8:30	89	0	1	**90**	6	0	0	**6**	0	0	0	**0**	10	0	0	**10**	11	0	0	**11**	0	0	0	**0**	0	0	0	0	0	0	**0**
8:30 to 8:45	100	4	4	**108**	2	0	0	**2**	0	0	0	**0**	8	0	0	**8**	18	0	0	**18**	0	0	0	**0**	0	0	0	0	0	0	**0**
8:45 to 9:00	94	3	2	**99**	12	0	0	**12**	0	0	0	**0**	12	0	0	**12**	15	0	0	**15**	0	0	0	**0**	1	0	0	0	0	0	**1**
9:00 to 9:15	104	1	0	**105**	11	0	0	**11**	0	0	0	**0**	5	0	0	**5**	10	0	0	**10**	0	0	0	**0**	0	0	0	0	0	0	**0**
9:15 to 9:30	119	2	0	**121**	11	0	0	**11**	0	0	0	**0**	8	1	0	**9**	17	0	0	**17**	0	0	0	**0**	0	0	0	0	0	0	**0**
AM Totals	**1,019**	**21**	**13**	**1,053**	**67**	**2**	**0**	**69**	**0**	**0**	**0**	**0**	**104**	**3**	**0**	**107**	**155**	**3**	**2**	**160**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**
15:00 to 15:15	187	6	2	**195**	18	0	0	**18**	0	0	0	**0**	8	1	0	**9**	28	1	0	**29**	0	0	0	**0**	0	0	0	0	0	0	**0**
15:15 to 15:30	146	8	1	**155**	12	0	0	**12**	0	0	0	**0**	5	0	0	**5**	15	0	0	**15**	0	0	0	**0**	0	0	0	0	0	0	**0**
15:30 to 15:45	162	2	1	**165**	8	1	0	**9**	0	0	0	**0**	4	1	0	**5**	25	1	0	**26**	0	0	0	**0**	0	1	0	0	0	0	**1**
15:45 to 16:00	145	1	2	**148**	14	0	0	**14**	0	0	0	**0**	7	0	0	**7**	7	2	0	**9**	0	0	0	**0**	0	0	0	0	0	0	**0**
16:00 to 16:15	155	1	0	**156**	10	0	0	**10**	0	0	0	**0**	9	0	0	**9**	23	1	0	**24**	0	0	0	**0**	0	0	0	0	0	0	**0**
16:15 to 16:30	135	2	0	**137**	6	0	0	**6**	0	0	0	**0**	8	1	0	**9**	17	1	0	**18**	0	0	0	**0**	0	0	0	0	0	0	**0**
16:30 to 16:45	148	1	1	**150**	15	0	0	**15**	0	0	0	**0**	14	0	0	**14**	30	0	0	**30**	0	0	0	**0**	0	0	0	0	0	0	**0**
16:45 to 17:00	146	1	1	**148**	15	0	0	**15**	0	0	0	**0**	13	0	0	**13**	30	0	0	**30**	0	0	0	**0**	0	0	0	0	0	0	**0**
17:00 to 17:15	173	0	1	**174**	15	0	0	**15**	0	0	0	**0**	10	0	0	**10**	16	0	0	**16**	0	0	0	**0**	1	0	0	0	0	0	**1**
17:15 to 17:30	177	3	0	**180**	13	0	0	**13**	0	0	0	**0**	8	0	0	**8**	19	0	0	**19**	0	0	0	**0**	0	0	0	0	0	0	**0**
17:30 to 17:45	174	3	1	**178**	12	0	0	**12**	0	0	0	**0**	12	0	1	**13**	10	0	0	**10**	0	0	0	**0**	0	0	0	0	0	0	**0**
17:45 to 18:00	170	2	1	**173**	14	0	0	**14**	0	0	0	**0**	8	0	0	**8**	19	1	0	**20**	0	0	0	**0**	0	0	0	0	0	0	**0**
18:00 to 18:15	150	2	1	**153**	13	0	0	**13**	0	0	0	**0**	8	0	0	**8**	14	1	0	**15**	0	0	0	**0**	0	0	0	0	0	0	**0**
18:15 to 18:30	98	1	0	**99**	8	1	0	**9**	0	0	0	**0**	11	0	0	**11**	13	1	0	**14**	0	0	0	**0**	0	1	0	0	0	0	**1**
18:30 to 18:45	90	3	1	**94**	8	0	0	**8**	0	0	0	**0**	8	0	0	**8**	9	0	0	**9**	0	0	0	**0**	0	0	0	0	0	0	**0**
18:45 to 19:00	130	1	1	**132**	7	0	0	**7**	0	0	0	**0**	7	0	0	**7**	9	0	0	**9**	0	0	0	**0**	0	0	0	0	0	0	**0**
PM Totals	**2,386**	**37**	**14**	**2,437**	**188**	**2**	**0**	**190**	**0**	**0**	**0**	**0**	**140**	**3**	**1**	**144**	**284**	**9**	**0**	**293**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**3**

▲

Job No. : N2913
Client : Positive Traffic
Suburb : Ironbark Ave
Location : 1. Old Hume Highway / Ironbark Ave

Day/Date : Thur, 8th December 2016
Weather : Fine
Description : Classified Intersection Count
: Hourly Summary



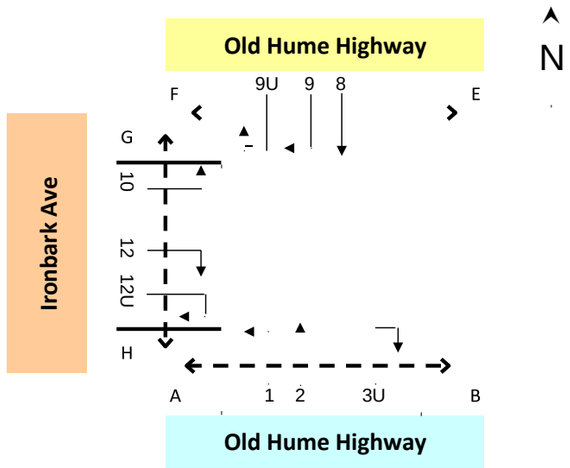
MATRIX Traffic and Transport Data

Approach	Old Hume Highway											
Direction	Direction 1 (Left Turn)				Direction 2 (Through)				Direction 3U (U Turn)			
Time Period	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total
6:30 to 7:30	38	1	0	**39**	392	9	13	**414**	0	0	0	**0**
6:45 to 7:45	39	1	0	**40**	394	8	15	**417**	0	0	0	**0**
7:00 to 8:00	44	0	0	**44**	422	6	13	**441**	0	0	0	**0**
7:15 to 8:15	46	0	0	**46**	455	6	10	**471**	0	0	0	**0**
7:30 to 8:30	50	0	0	**50**	534	13	8	**555**	0	0	0	**0**
7:45 to 8:45	69	0	0	**69**	616	13	11	**640**	0	0	0	**0**
8:00 to 9:00	75	0	0	**75**	630	15	12	**657**	0	0	0	**0**
8:15 to 9:15	86	0	0	**86**	630	16	10	**656**	0	0	0	**0**
8:30 to 9:30	92	1	0	**93**	550	9	8	**567**	0	0	0	**0**
AM Totals	**180**	**2**	**0**	**182**	**1,476**	**31**	**29**	**1,536**	**0**	**0**	**0**	**0**
15:00 to 16:00	83	4	0	**87**	487	7	6	**500**	0	0	0	**0**
15:15 to 16:15	84	4	0	**88**	472	8	6	**486**	0	0	0	**0**
15:30 to 16:30	95	4	0	**99**	482	6	5	**493**	0	0	0	**0**
15:45 to 16:45	94	2	0	**96**	494	7	7	**508**	0	0	0	**0**
16:00 to 17:00	90	0	0	**90**	511	10	8	**529**	0	0	0	**0**
16:15 to 17:15	92	0	0	**92**	550	7	9	**566**	0	0	0	**0**
16:30 to 17:30	84	1	0	**85**	577	7	7	**591**	0	0	0	**0**
16:45 to 17:45	83	3	1	**87**	608	6	5	**619**	0	0	0	**0**
17:00 to 18:00	84	4	1	**89**	633	3	5	**641**	0	0	0	**0**
17:15 to 18:15	76	6	1	**83**	577	6	7	**590**	0	0	0	**0**
17:30 to 18:30	74	5	1	**80**	560	6	7	**573**	0	0	0	**0**
17:45 to 18:45	72	3	0	**75**	527	7	6	**540**	0	0	0	**0**
18:00 to 19:00	60	2	0	**62**	478	6	5	**489**	0	0	0	**0**
PM Totals	**317**	**10**	**1**	**328**	**2,109**	**26**	**24**	**2,159**	**0**	**0**	**0**	**0**

Approach	Old Hume Highway												Ironbark Ave								Crossing Pedestrians									
Direction	Direction 8 (Through)				Direction 9 (Right Turn)				Direction 9U (U Turn)				Direction 10 (Left Turn)				Direction 12 (Right Turn)				Direction 12U (U Turn)									
Time Period	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	A	B	E	F	G	H	Total
6:30 to 7:30	281	7	4	**292**	10	1	0	**11**	0	0	0	**0**	21	0	0	**21**	42	2	2	**46**	0	0	0	**0**	0	0	0	0	0	0	**0**
6:45 to 7:45	301	7	5	**313**	13	1	0	**14**	0	0	0	**0**	29	0	0	**29**	43	2	0	**45**	0	0	0	**0**	0	0	0	0	0	0	**0**
7:00 to 8:00	317	6	6	**329**	13	2	0	**15**	0	0	0	**0**	40	0	0	**40**	46	0	0	**46**	0	0	0	**0**	0	0	0	0	0	0	**0**
7:15 to 8:15	318	7	3	**328**	18	1	0	**19**	0	0	0	**0**	48	2	0	**50**	50	1	0	**51**	0	0	0	**0**	0	0	0	0	0	0	**0**
7:30 to 8:30	321	4	3	**328**	21	1	0	**22**	0	0	0	**0**	50	2	0	**52**	53	1	0	**54**	0	0	0	**0**	0	0	0	0	0	0	**0**
7:45 to 8:45	348	6	6	**360**	20	1	0	**21**	0	0	0	**0**	45	2	0	**47**	60	1	0	**61**	0	0	0	**0**	0	0	0	0	0	0	**0**
8:00 to 9:00	361	9	7	**377**	28	0	0	**28**	0	0	0	**0**	42	2	0	**44**	61	1	0	**62**	0	0	0	**0**	1	0	0	0	0	0	**1**
8:15 to 9:15	387	8	7	**402**	31	0	0	**31**	0	0	0	**0**	35	0	0	**35**	54	0	0	**54**	0	0	0	**0**	1	0	0	0	0	0	**1**
8:30 to 9:30	417	10	6	**433**	36	0	0	**36**	0	0	0	**0**	33	1	0	**34**	60	0	0	**60**	0	0	0	**0**	1	0	0	0	0	0	**1**
AM Totals	**1,019**	**21**	**13**	**1,053**	**67**	**2**	**0**	**69**	**0**	**0**	**0**	**0**	**104**	**3**	**0**	**107**	**155**	**3**	**2**	**160**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**
15:00 to 16:00	640	17	6	**663**	52	1	0	**53**	0	0	0	**0**	24	2	0	**26**	75	4	0	**79**	0	0	0	**0**	0	1	0	0	0	0	**1**
15:15 to 16:15	608	12	4	**624**	44	1	0	**45**	0	0	0	**0**	25	1	0	**26**	70	4	0	**74**	0	0	0	**0**	0	1	0	0	0	0	**1**
15:30 to 16:30	597	6	3	**606**	38	1	0	**39**	0	0	0	**0**	28	2	0	**30**	72	5	0	**77**	0	0	0	**0**	0	1	0	0	0	0	**1**
15:45 to 16:45	583	5	3	**591**	45	0	0	**45**	0	0	0	**0**	38	1	0	**39**	77	4	0	**81**	0	0	0	**0**	0	0	0	0	0	0	**0**
16:00 to 17:00	584	5	2	**591**	46	0	0	**46**	0	0	0	**0**	44	1	0	**45**	100	2	0	**102**	0	0	0	**0**	0	0	0	0	0	0	**0**
16:15 to 17:15	602	4	3	**609**	51	0	0	**51**	0	0	0	**0**	45	1	0	**46**	93	1	0	**94**	0	0	0	**0**	1	0	0	0	0	0	**1**
16:30 to 17:30	644	5	3	**652**	58	0	0	**58**	0	0	0	**0**	45	0	0	**45**	95	0	0	**95**	0	0	0	**0**	1	0	0	0	0	0	**1**
16:45 to 17:45	670	7	3	**680**	55	0	0	**55**	0	0	0	**0**	43	0	1	**44**	75	0	0	**75**	0	0	0	**0**	1	0	0	0	0	0	**1**
17:00 to 18:00	694	8	3	**705**	54	0	0	**54**	0	0	0	**0**	38	0	1	**39**	64	1	0	**65**	0	0	0	**0**	1	0	0	0	0	0	**1**
17:15 to 18:15	671	10	3	**684**	52	0	0	**52**	0	0	0	**0**	36	0	1	**37**	62	2	0	**64**	0	0	0	**0**	0	0	0	0	0	0	**0**
17:30 to 18:30	592	8	3	**603**	47	1	0	**48**	0	0	0	**0**	39	0	1	**40**	56	3	0	**59**	0	0	0	**0**	0	1	0	0	0	0	**1**
17:45 to 18:45	508	8	3	**519**	43	1	0	**44**	0	0	0	**0**	35	0	0	**35**	55	3	0	**58**	0	0	0	**0**	0	1	0	0	0	0	**1**
18:00 to 19:00	468	7	3	**478**	36	1	0	**37**	0	0	0	**0**	34	0	0	**34**	45	2	0	**47**	0	0	0	**0**	0	1	0	0	0	0	**1**
PM Totals	**2,386**	**37**	**14**	**2,437**	**188**	**2**	**0**	**190**	**0**	**0**	**0**	**0**	**140**	**3**	**1**	**144**	**284**	**9**	**0**	**293**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**3**

Job No. : N2913
Client : Positive Traffic
Suburb : Ironbark Ave
Location : 1. Old Hume Highway / Ironbark Ave

Day/Date : Thur, 8th December 2016
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary



MATRIX Traffic and Transport Data

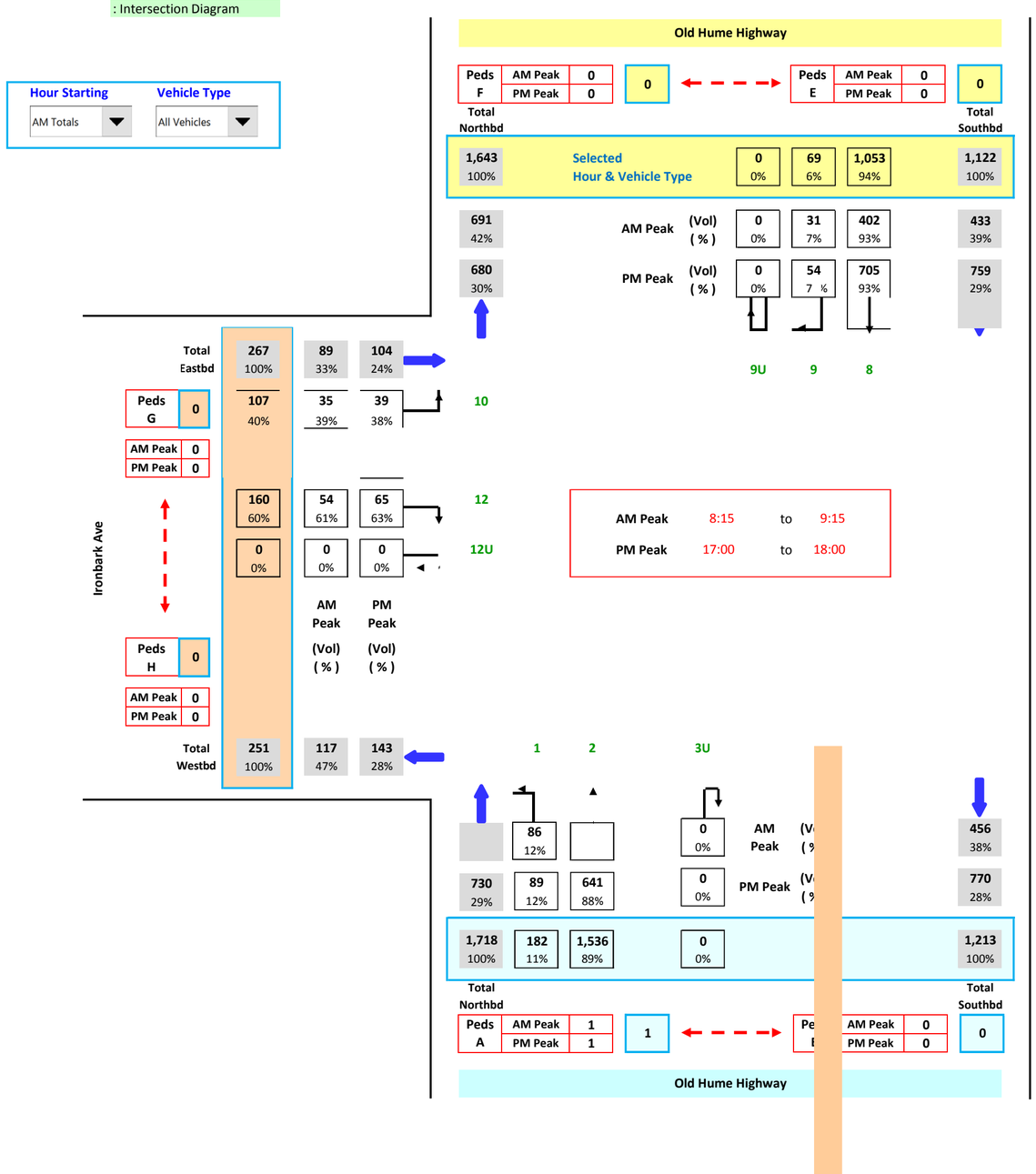
	Approach	Old Hume Highway								Ironbark Ave				
	Time Period	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	
AM	8:15 to 9:15	716	16	10	**742**	418	8	7	**433**	89	0	0	**89**	**1,264**
PM	17:00 to 18:00	717	7	6	**730**	748	8	3	**759**	102	1	1	**104**	**1,593**

Approach	Old Hume Highway				Old Hume Highway				Ironbark Ave				Grand Total
Time Period	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	
6:30 to 7:30	430	10	13	**453**	291	8	4	**303**	63	2	2	**67**	**823**
6:45 to 7:45	433	9	15	**457**	314	8	5	**327**	72	2	0	**74**	**858**
7:00 to 8:00	466	6	13	**485**	330	8	6	**344**	86	0	0	**86**	**915**
7:15 to 8:15	501	6	10	**517**	336	8	3	**347**	98	3	0	**101**	**965**
7:30 to 8:30	584	13	8	**605**	342	5	3	**350**	103	3	0	**106**	**1,061**
7:45 to 8:45	685	13	11	**709**	368	7	6	**381**	105	3	0	**108**	**1,198**
8:00 to 9:00	705	15	12	**732**	389	9	7	**405**	103	3	0	**106**	**1,243**
8:15 to 9:15	716	16	10	**742**	418	8	7	**433**	89	0	0	**89**	**1,264**
8:30 to 9:30	642	10	8	**660**	453	10	6	**469**	93	1	0	**94**	**1,223**
AM Totals	**1,656**	**33**	**29**	**1,718**	**1,086**	**23**	**13**	**1,122**	**259**	**6**	**2**	**267**	**3,107**
15:00 to 16:00	570	11	6	**587**	692	18	6	**716**	99	6	0	**105**	**1,408**
15:15 to 16:15	556	12	6	**574**	652	13	4	**669**	95	5	0	**100**	**1,343**
15:30 to 16:30	577	10	5	**592**	635	7	3	**645**	100	7	0	**107**	**1,344**
15:45 to 16:45	588	9	7	**604**	628	5	3	**636**	115	5	0	**120**	**1,360**
16:00 to 17:00	601	10	8	**619**	630	5	2	**637**	144	3	0	**147**	**1,403**
16:15 to 17:15	642	7	9	**658**	653	4	3	**660**	138	2	0	**140**	**1,458**
16:30 to 17:30	661	8	7	**676**	702	5	3	**710**	140	0	0	**140**	**1,526**
16:45 to 17:45	691	9	6	**706**	725	7	3	**735**	118	0	1	**119**	**1,560**
17:00 to 18:00	717	7	6	**730**	748	8	3	**759**	102	1	1	**104**	**1,593**
17:15 to 18:15	653	12	8	**673**	723	10	3	**736**	98	2	1	**101**	**1,510**
17:30 to 18:30	634	11	8	**653**	639	9	3	**651**	95	3	1	**99**	**1,403**
17:45 to 18:45	599	10	6	**615**	551	9	3	**563**	90	3	0	**93**	**1,271**
18:00 to 19:00	538	8	5	**551**	504	8	3	**515**	79	2	0	**81**	**1,147**
PM Totals	**2,426**	**36**	**25**	**2,487**	**2,574**	**39**	**14**	**2,627**	**424**	**12**	**1**	**437**	**5,551**

Job No. : N2913
Client : Positive Traffic
Suburb : Ironbark Ave
Location : 1. Old Hume Highway / Ironbark Ave

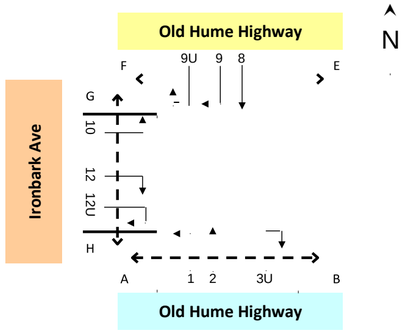
Day/Date : Thur, 8th December 2016
Weather : Fine
Description : Classified Intersection Count
: Intersection Diagram

MATRIX Traffic and Transport Data



Job No. : N2913
Client : Positive Traffic
Suburb : Ironbark Ave
Location : 1. Old Hume Highway / Ironbark Ave

Day/Date : Thur, 8th December 2016
Weather : Fine
Description : Classified Intersection Count
: Pedestrian Data



MATRIX Traffic and Transport Data

Direction	Pedestrians						
Time Period	A	B		E	F	G	H
6:30 to 6:45	0	0		0	0	0	0
6:45 to 7:00	0	0		0	0	0	0
7:00 to 7:15	0	0		0	0	0	0
7:15 to 7:30	0	0		0	0	0	0
7:30 to 7:45	0	0		0	0	0	0
7:45 to 8:00	0	0		0	0	0	0
8:00 to 8:15	0	0		0	0	0	0
8:15 to 8:30	0	0		0	0	0	0
8:30 to 8:45	0	0		0	0	0	0
8:45 to 9:00	1	0		0	0	0	0
9:00 to 9:15	0	0		0	0	0	0
9:15 to 9:30	0	0		0	0	0	0
AM Totals	**1**	**0**		**0**	**0**	**0**	**0**
15:00 to 15:15	0	0		0	0	0	0
15:15 to 15:30	0	0		0	0	0	0
15:30 to 15:45	0	1		0	0	0	0
15:45 to 16:00	0	0		0	0	0	0
16:00 to 16:15	0	0		0	0	0	0
16:15 to 16:30	0	0		0	0	0	0
16:30 to 16:45	0	0		0	0	0	0
16:45 to 17:00	0	0		0	0	0	0
17:00 to 17:15	1	0		0	0	0	0
17:15 to 17:30	0	0		0	0	0	0
17:30 to 17:45	0	0		0	0	0	0
17:45 to 18:00	0	0		0	0	0	0
18:00 to 18:15	0	0		0	0	0	0
18:15 to 18:30	0	1		0	0	0	0
18:30 to 18:45	0	0		0	0	0	0
18:45 to 19:00	0	0		0	0	0	0

PM Totals	1	2		0	0	0	0

7. Appendix B – Preliminary Car Park Plan

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design+ PLANNING

Suite 801, 171 Clarence Street

SYDNEY NSW 2000

PO Box 1778 SYDNEY NSW 2001