HAMMOND ROAD NORTH STRUCTURE PLAN

THE HAMMOND ROAD NORTH STRUCTURE PLAN FOR LOTS 1, 300 AND 803, YANGEBUP ROAD; LOTS 7, 99, 146, AND 147 HAMMOND ROAD; AND LOT 4308 BEELIAR DRIVE, COCKBURN CENTRAL

CITY OF COCKBURN

NOVEMBER 2018

Issue 3

BURGESS DESIGN GROUP

TOWN PLANNING + URBAN DESIGN

THE HAMMOND ROAD NORTH STRUCTURE PLAN FOR LOTS 1, 300 AND 803 YANGEBUP ROAD; LOTS 7, 99, 146 AND 147 HAMMOND ROAD; AND LOT 4308 BEELIAR DRIVE, COCKBURN CENTRAL

City of Cockburn

HAMMOND ROAD NORTH STRUCTURE PLAN

Issue 3: November 2018

Prepared for: **Tony and John Alessandrini**

Prepared by: Burgess Design Group
101 Edward Street, Perth, 6000
PO Box 8779, Perth Business Centre, W.A., 6849
Telephone: (08) 9328 6411
Facsimile: (08) 9328 4062
Website: www.burgessdesigngroup.com.au
Email: reception@burgessdesigngroup.com.au

Project Planner: Mark Szabo
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Quality Assurance

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3	WAPC Modifications 19/10/18	5/11/18	Zarina MacDonald	Mark Szabo

APPROVAL OF THE LOCAL STRUCTURE PLAN FOR LOTS 1, 300 AND 803 YANGEBUP ROAD, LOTS 7, 99, 146 AND 147 HAMMOND ROAD, AND LOT 4308 BEELIAR DRIVE, COCKBURN CENTRAL, CITY OF COCKBURN

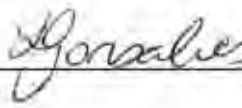
This structure plan is prepared under the provisions of the City of Cockburn Town Planning Scheme No.3 (TPS3).

IT IS CERTIFIED THAT THIS STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON:

14 November 2018 Date

Signed for and on behalf of the Western Australian Planning Commission:

An officer of the Commission duly authorised by the Commission pursuant to section 16 of the Planning and Development Act 2005 for that purpose, in the presence of:



Witness

15 November 2018 Date

14 November 2028 Date of Expiry

TABLE 1: TABLE OF AMENDMENTS

AMENDMENT NO.	SUMMARY OF THE AMENDMENT	AMENDMENT TYPE	DATE APPROVED BY WAPC

EXECUTIVE SUMMARY

This Structure Plan applies to Lots 1, 300 and 803 Yangebup Road, Lots 7, 99, 146 and 147 Hammond Road, and Lot 4308 Beeliar Drive, Cockburn Central.

This Structure Plan intends to facilitate the development of a neighbourhood centre. To that end, the Structure Plan designates a combination of 'Local Centre' zone and 'Mixed Business' zone over the land, and requires that development is in accordance with a Local Development Plan.

A summary of the areas and land uses proposed is provided in **Table 2**, below.

TABLE 2: SUMMARY TABLE

ITEM	DATA	STRUCTURE PLAN, PART TWO, (SECTION NO.)
Total area covered by the structure plan	7.5235 hectares	1.2.2
Area of each land use proposed: - Local Centre - Mixed Business	Hectares 3.5533 3.2763	 3.1.1 3.1.2
Estimated commercial floor space	8,100m² net lettable area	3.5
Estimated number of jobs created	648 jobs	3.5

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ABBREVIATIONS

AS3959	Australian Standard 3959: Construction of buildings in bushfire-prone areas
ASS	Acid Sulphate Soils
CCACP	Cockburn Central Activity Centre Plan
DA35	Development Area 35
DCP13	Development Contribution Plan 13
LCACS	City of Cockburn's Local Commercial Activity Centre Strategy
LDP	Local Development Plan
mAHD	Metres Australian Height Datum
MRS	Metropolitan Region Scheme
Scheme/TPS3	City of Cockburn Town Planning Scheme No.3

PART ONE | IMPLEMENTATION

1. STRUCTURE PLAN AREA

The Structure Plan is identified as the Hammond Road North Structure Plan. This Structure Plan shall apply to the land contained within the inner edge of the line denoting the Structure Plan boundary on the Structure Plan Map (refer **Plan 1 – Structure Plan Map**).

2. OPERATION

The date the Structure Plan comes into effect is the date the Structure Plan is approved by the WAPC.

3. STAGING

As all infrastructure and services are readily available to the site, development of the Structure Plan area for various land uses is not dependent on a staged approach.

4. SUBDIVISION AND DEVELOPMENT REQUIREMENTS

4.1 LAND USE

Land use permissibility within the Structure Plan area shall be in accordance with that identified in the Scheme for the applicable zone. Pursuant to the principles identified by State Planning Policy 4.1 State Industrial Buffer (Amended), the following sensitive land uses are not supported within the Structure Planning area:

- Bed and Breakfast;
- Child Care Premises;
- Dwelling – Aged or Dependent Persons;
- Dwelling – Caretakers;
- Dwelling – Grouped;
- Dwelling – Multiple;
- Home Business;
- Home Occupation;
- Home Office;
- House – Lodging;
- House – Single;
- Residential Building; and
- Tourist Accommodation.

4.2 RETAIL FLOORSPACE

Retail floorspace within the Structure Planning area shall not exceed 8,100m².

4.3 LANDSCAPING PLAN

A Landscaping Plan to be provided at the subdivision and/or development stage that provides for the management of the interface between the western portion of the subject land and the abutting Bush Forever area.

4.4 BUSHFIRE HAZARD ASSESSMENT

A bushfire hazard assessment will be required to accompany subdivision or development application(s), whichever comes first.

4.5 URBAN WATER MANAGEMENT PLAN

An urban water management plan will be required at the subdivision stage.

4.6 ROAD INFRASTRUCTURE

The Developer shall make arrangements with the City of Cockburn detailing timing and cost sharing for the upgrade of the Hammond Road, Cooper Road, and Yangebup Road intersection, and the upgrade of Yangebup Road to an urban standard where it abuts the Structure Plan Area.

5. LOCAL DEVELOPMENT PLANS

Local Development Plan/s will be prepared for the Structure Plan area pursuant to the WAPC's Local Development Plan Framework and Schedule 2, Part 6, 'Deemed Provisions for Local Planning Schemes' of the *Planning and Development (Local Planning Schemes) Regulations 2015.* To inform the subdivision and/or development stages, the Local Development Plan/s will encompass all the Structure Plan area and as a minimum each Local Development Plan is to respond to the following intended outcomes:

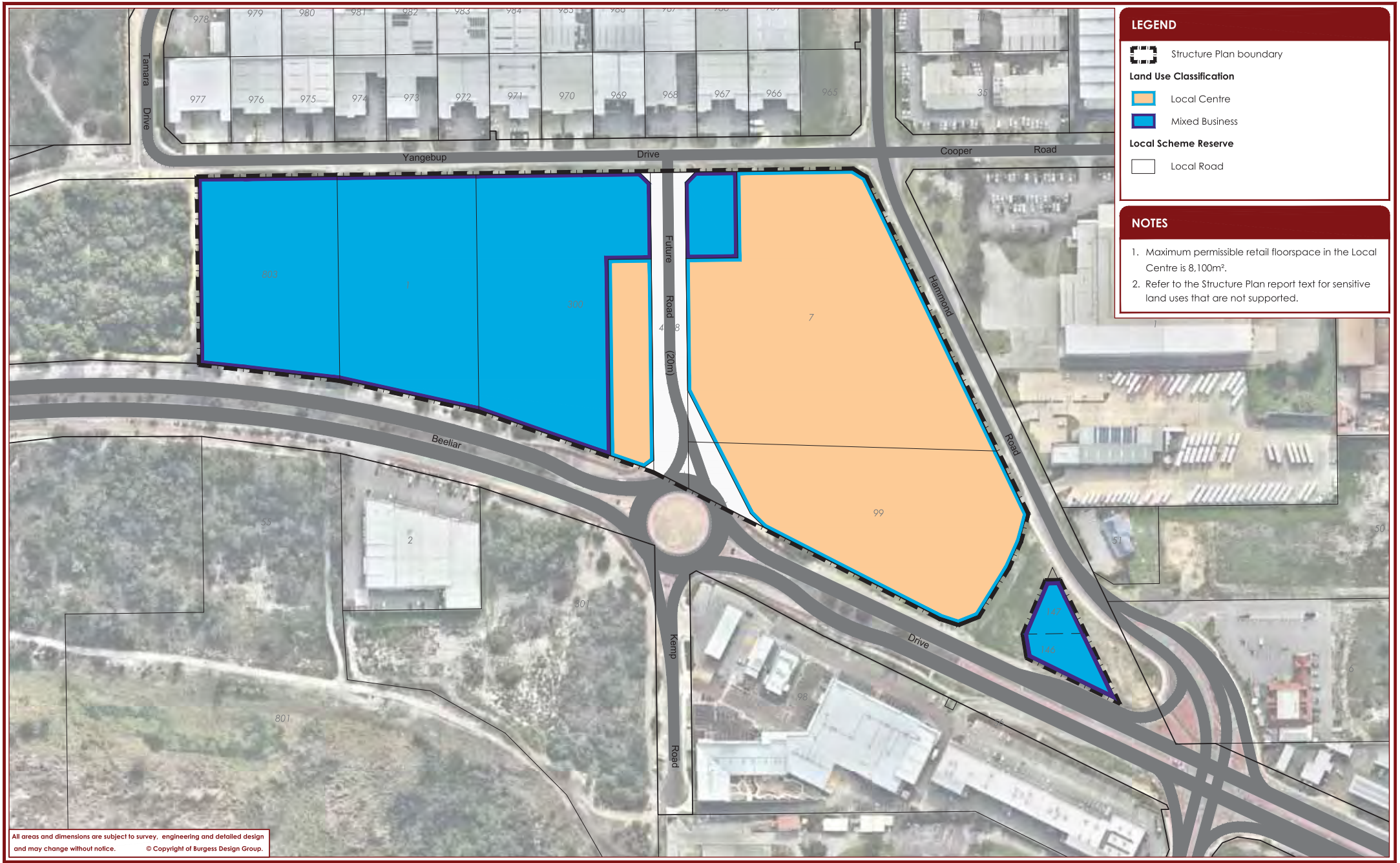
i. Built form in terms of location, orientation, bulk, scale, and height of buildings;
ii. Mix of land uses;
iii. Vehicle access, vehicle parking, pedestrian and cyclist movements;
iv. Provision of end of trip facilities and improvements to access and facilities for pedestrians and cyclists;
v. Street interface treatments along the 'main street' and Beeliar Drive.

6. ADDITIONAL INFORMATION

Table 3, below, sets out the additional information that is required to be submitted under the Structure Plan, and the stage at which it is to be submitted.

TABLE 3: ADDITIONAL INFORMATION REQUIRED

ADDITIONAL INFORMATION	APPROVAL STAGE	CONSULTATION REQUIRED
Local Development Plan	Prior to development approval, or such later stage as deemed appropriate at the City's discretion	As per Scheme requirements



LEGEND

Structure Plan boundary

Land Use Classification

Local Centre

Mixed Business

Local Scheme Reserve

Local Road

NOTES

1. Maximum permissible retail floorspace in the Local Centre is 8,100m².
2. Refer to the Structure Plan report text for sensitive land uses that are not supported.

NORTH

0 20 40 60 80 100m

SCALE 1:2000 (A3)

PLAN 1: HAMMOND ROAD NORTH STRUCTURE PLAN MAP COCKBURN CENTRAL

CITY OF COCKBURN

BURGESS DESIGN GROUP
TOWN PLANNING + URBAN DESIGN
PO Box 8779, Perth Business Centre 6849
www.burgessdesigngroup.com.au
P (08) 9328 6411
F (08) 9328 4062

Plan No: ALE COC 2-01g Client: ALE'S
Date: 22.10.18 Planner: MS/MB

PART TWO | EXPLANATORY SECTION

1. PLANNING BACKGROUND

1.1 INTRODUCTION AND PURPOSE

This Structure Plan has been prepared on behalf of the landowners of Lots 1, 300 and 803 Yangebup Road, 7, 99, 146 and 147 Hammond Road, and Lot 4308 Beeliar Drive, Cockburn Central.

The general objectives of the Structure Plan are to:

- Provide for commercial, retail, and mixed business development and compatible land uses incidental thereto;
- Promote a high quality urban form, centred around a main street; and,
- Create a retail environment that complements the Cockburn Central Activity Centre.

1.2 LAND DESCRIPTION

1.2.1 LOCATION

The site is located approximately 1.7km west of the Cockburn Central Train Station, and approximately 19km south of the Perth CBD (see **Figure 1 – Location Plan**). The site is generally bound by Yangebup Road to the north, Hammond Road to the east, Beeliar Drive to the south, and the Yangebup Flora and Fauna Reserve to the west.

1.2.2 AREA AND LAND USE

The site comprises 8 lots, and a portion of road reserve, totalling approximately 7.5235ha.

The site currently accommodates a Waldecks Nursery, West 'n' Fresh Fishmongers, Tony Ale Markets, three residences (on Lots 1, 7, and 99) and a large shed (on Lot 803). The remainder of the site is cleared, having previously been used for agricultural purposes (**see Figure 2 – Aerial Photograph**).

1.2.3 LEGAL DESCRIPTION AND OWNERSHIP

The land can be legally described as:

- Lot 1 on Deposited Plan 59832, Volume 2702, Folio 759;
- Lot 7 on Diagram 25994, Volume 1250, Folio 932;
- Lot 99 on Deposited Plan 57197, Volume 2688, Folio 903;
- Lot 146 on Diagram 91759, Volume 2189, Folio 263;
- Lot 147 on Plan 21688, Volume 2214, Folio 609;
- Lot 300 on Deposited Plan 402552, Volume 2898, Folio 294;
- Lot 803 on Deposited Plan 44876, Volume 2624, Folio 442; and,
- Lot 4308 on Deposited Plan 193038, Volume 2151, Folio 262.

Copies of the relevant Certificates of Title are attached at **Appendix 1**.

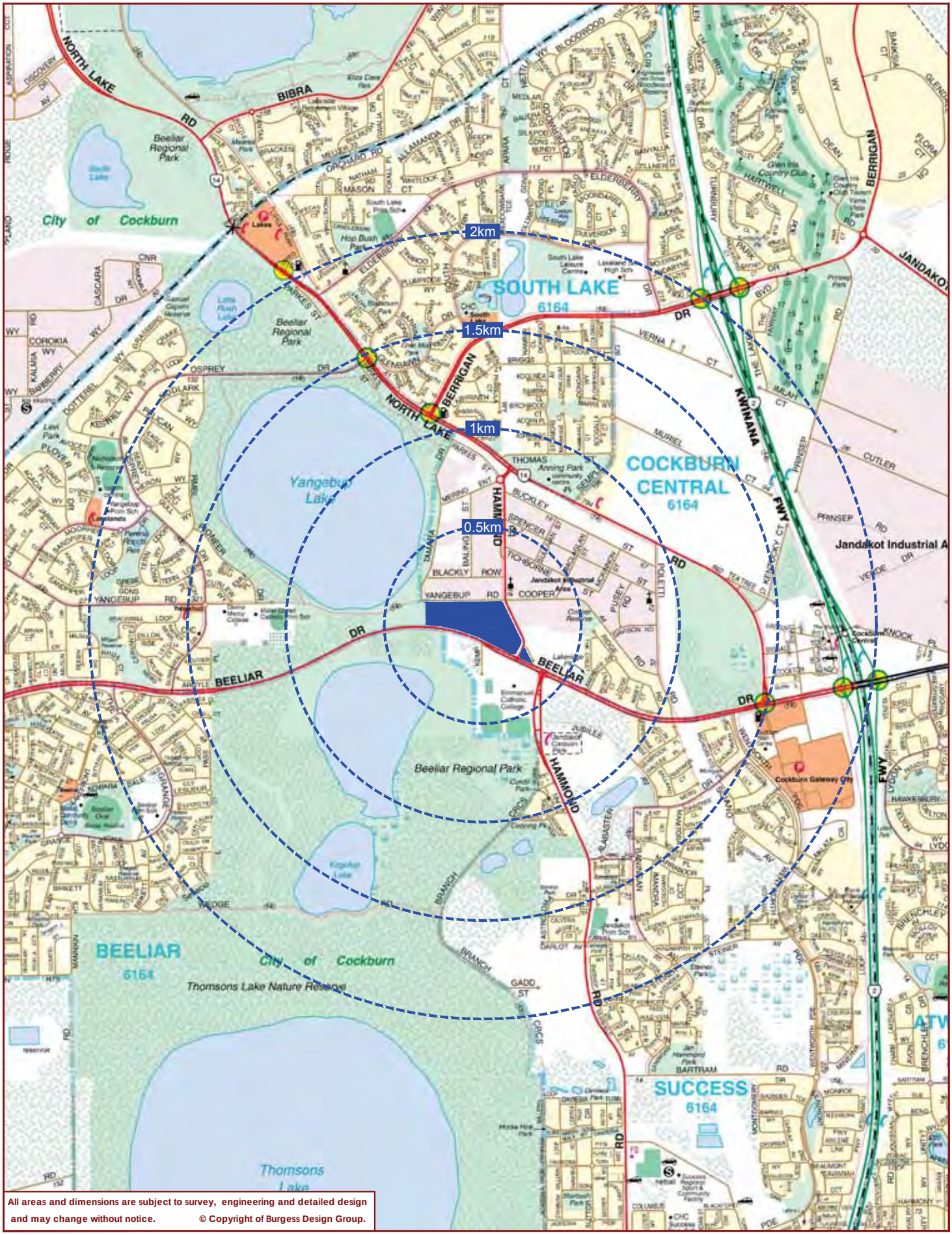


FIGURE 1: LOCATION PLAN
HAMMOND ROAD NORTH
COCKBURN CENTRAL

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www.burgessdesigngroup.com.au
P (08) 9328 6411
F (08) 9328 4062

Plan No: ALE COC 9-01 Client: ALE'S
Date: 05.02.16 Planner: MS/MB

CITY OF COCKBURN

NORTH

0 20 40 60 80 100m

SCALE 1:2000 (A3)

FIGURE 2: AERIAL PHOTOGRAPH
HAMMOND ROAD NORTH
COCKBURN CENTRAL
CITY OF COCKBURN

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F (08) 9328 4062

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Date: 22.10.18 Planner: MS/MB

1.3 PLANNING FRAMEWORK

1.3.1 ZONING AND RESERVATIONS

The site is zoned 'Urban' under the Metropolitan Region Scheme (MRS) and 'Development' under the TPS3, which also designates the land 'Development Area 35' (DA35) (see **Figures 3** & **4**, respectively).

DA35, through the Development Area provisions listed under Table 9 of the Scheme, seeks to facilitate commercial, retail, and mixed business development over the site in accordance with an approved Structure Plan that addresses retail sustainability and traffic/parking considerations.

1.3.2 REGIONAL AND SUB-REGIONAL STRUCTURE PLAN

South Metropolitan Peel Sub-Regional Planning Framework

The WAPC's South Metropolitan Peel Sub-Regional Planning Framework (Framework) provides high level strategic guidance for the future development of the Metropolitan South-West, Metropolitan South-East and Peel sub regions to accommodate part of the long-term growth of the Perth and Peel regions to 3.5 million people.

The proposed development complies with the principles of the Framework, in that it contributes to a socially, economically, and environmentally sustainable urban form that maximises the use of existing infrastructure to provide employment opportunities and goods and services for the surrounding communities.

1.3.3 PLANNING STRATEGIES

City of Cockburn Local Commercial Activity Centre Strategy

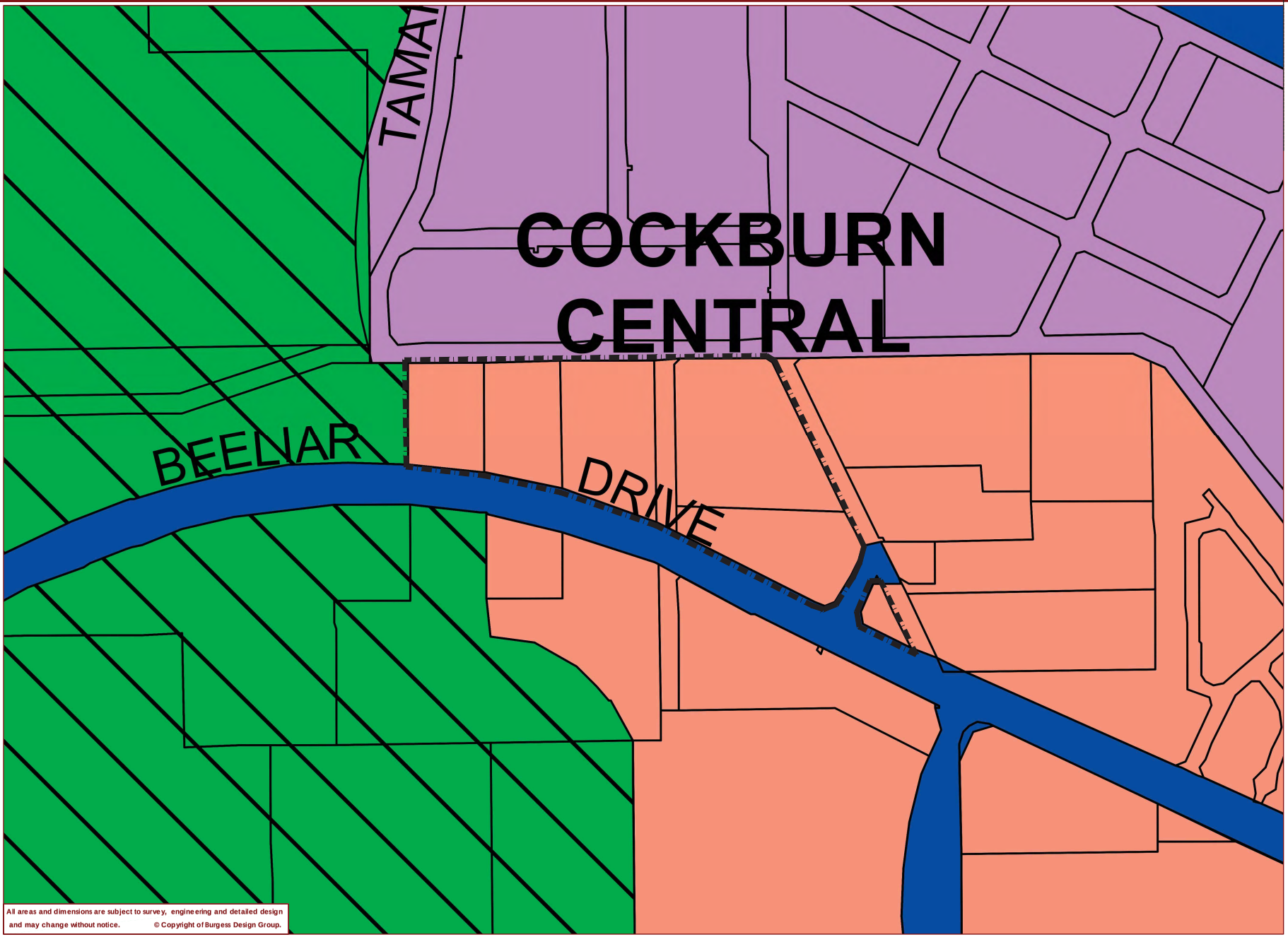
The City of Cockburn's Local Commercial Activity Centre Strategy (LCACS) represents a new strategic direction for the planning and development of activity centres within the City, and responds to the policy context established in *Directions 2031 and beyond*, and *State Planning Policy No.4.2 – Activity Centres for Perth and Peel*.

LCACS identifies the subject site as 'Tony Ales Local Centre' and shows it being within a strategic employment centre, as well as being located adjacent to the 'Beeliar Drive Mixed Business Area'.

Cockburn Central Activity Centre Plan

The Cockburn Central Activity Centre Plan (CCACP) seeks to capitalise on high density residential and mixed use development, high levels of amenity, proximity to natural settings and high levels of public infrastructure to make Cockburn Central the most important centre south of Perth.

CCACP shows the site as being located within the 'frame' area surrounding Cockburn Central (the 'frame' area is deemed to have a direct influence and reliance on the activity centre). This Structure Plan recognises this role, and seeks to create a centre that provides for retail and mixed business uses that support rather than compete with Cockburn Central.



Legend

Subject site

Reserved lands

- Civic and cultural
- Parks and recreation
- Public purposes
- CP Public purposes - car park
- CG Public purposes - Commonwealth Government
- HS Public purposes - high school
- H Public purposes - hospital
- P Public purposes - prison
- SU Public purposes - special uses
- SEC Public purposes - State Energy Commission
- TS Public purposes - technical school
- WSD Public purposes - Water Authority of WA
- U Public purposes - university
- Railways
- Port installations
- State forests
- Waterways
- Water catchments

Reserved roads

- Primary regional roads
- Other regional roads

Zones

- Central city area
- Industrial
- Special industrial
- Private recreation
- Rural
- Rural - water protection
- Urban
- Urban deferred

Notice of delegation

- Bush Forever area

Redevelopment schemes

- Redevelopment scheme/act area area

NORTH

NTS

FIGURE 3: MRS ZONING
HAMMOND ROAD NORTH
COCKBURN CENTRAL
CITY OF COCKBURN

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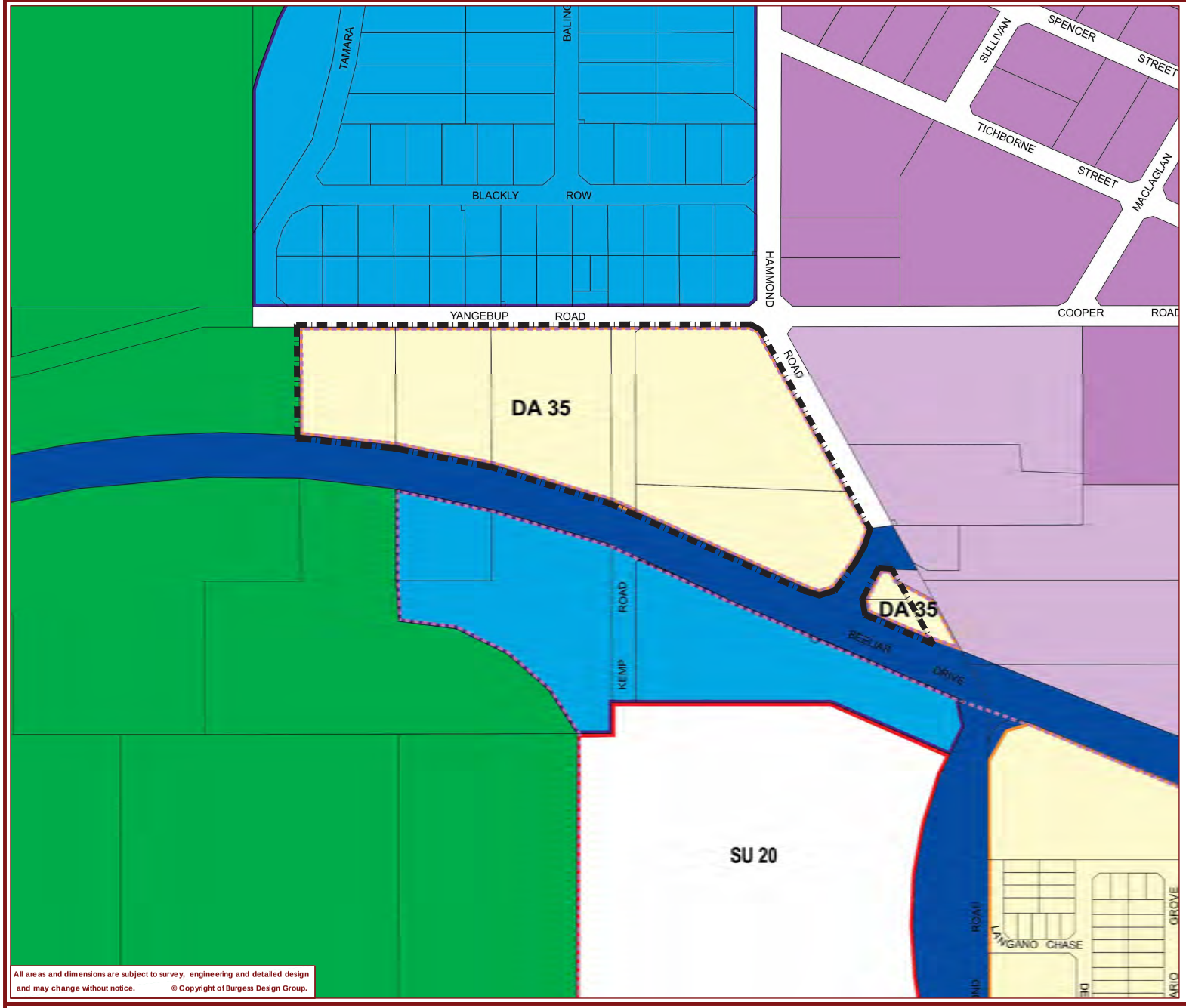

LEGEND

REGION SCHEME RESERVES (MRS)

- Civic and cultural
- Other regional roads
- Parks and recreation
- R Parks and recreation restricted
- Port installations
- Primary regional roads
- Railways
- State forests
- Waterways
- Water catchments
- Public purposes
- CP Public purposes - car park
- CG Public purposes - Commonwealth Government
- HS Public purposes - high school
- H Public purposes - hospital
- P Public purposes - prison
- SU Public purposes - special uses
- SEC Public purposes - State Energy Commission
- TS Public purposes - technical school
- U Public purposes - university
- WSD Public purposes - Water Authority of WA

LOCAL SCHEME RESERVES

(see scheme text for additional information)

- Lakes and drainage
- Local road
- Parks and recreation
- C Public purposes : Civic
- AG Public purposes : Dept of
- FS Public purposes : Fire station
- GS Public purposes : Gas pipeline
- OP Public purposes : Oil pipeline
- P Public purposes : Police station
- K Public purposes : Pre-school
- PS Public purposes : Primary school
- WC Public purposes : Water Corporation
- WP Public purposes : Western Power

LOCAL SCHEME ZONES

(see scheme text for additional information)

- Development
- District centre
- Industry
- Light and service industry
- Local centre
- Mixed business
- Mixed use
- Regional centre
- Residential
- Resource
- Rural
- Rural living
- Special use

OTHER CATEGORIES

(see scheme text for additional information)

- Scheme boundary
- Local Government boundary
- Hope Valley - Wattleup Redevelopment Area
- R20 R Codes
- A1 Additional uses
- R1 Restricted uses
- SU1 Special use area
- Peel-Harvey coastal plain catchment area
- Building envelope
- BVA Bushfire vulnerability areas
- DA1 Development area
- Development contribution area
- JA Jandakot airport
- Heritage place
- No zone
- Waterbodies
- SUBJECT SITE

NORTH

NTS

FIGURE 4: TPS NO.3 ZONING
HAMMOND ROAD NORTH
COCKBURN CENTRAL

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1.3.4 PLANNING POLICIES

State Planning Policy 4.1 – State Industrial Buffer

State Planning Policy 4.1 (SPP4.1) sets out objectives and principles guiding the application and implementation of buffer requirements to protect the long term security of industrial zones by ensuring suitable separation is provided to sensitive land uses.

A number of Industrial uses exist in the vicinity of the site, giving rise to a need for off-site buffer areas that impact the Structure Plan area. Pursuant to the provisions of SPP4.1, the following sensitive land uses will not be supported within the Structure Plan area:

- Bed and Breakfast;
- Dwelling – Aged or Dependent Persons;
- Dwelling – Caretakers;
- Dwelling – Grouped;
- Dwelling – Multiple;
- Home Business;
- Home Occupation;
- Home Office;
- House – Lodging;
- House – Single;
- Residential Building; and
- Tourist Accommodation.

State Planning Policy 4.2 – Activity Centres for Perth and Peel

State Planning Policy 4.2 (SPP4.2) specifies planning requirements for the planning and development of activity centres and provides for an even distribution of jobs, services and amenities according to the strategic function of centres within the activity centre hierarchy.

Under SPP 4.2, the subject site is classified as a 'Neighbourhood Centre', providing for daily and weekly household shopping needs, community facilities and a small range of other convenience services. This Structure Plan has been prepared in accordance with the requirements of SPP 4.2.

1.3.5 OTHER APPROVALS AND DECISIONS

Scheme Amendment No.90

The subject land was rezoned from 'Light & Service Industry' & 'Local Centre' to 'Development' zone with a 'DA35' designation through Scheme Amendment No.90, gazetted on 17 October 2014. This amendment also introduced a number of special provisions relating to the site under Schedule 11 of the Scheme, with the intent of facilitating commercial, retail, and mixed business development in accordance with an approved Structure Plan.

This Structure Plan has been prepared in accordance with the provisions of Schedule 11, and the intent of Amendment No.90.

1.3.6 Pre Lodgement Consultation

TABLE 4: PRE LODGEMENT CONSULTATION

AGENCY	DATE OF CONSULTATION	METHOD OF CONSULTATION	SUMMARY OF OUTCOME
Land owners within and adjacent to the structure plan area	NA.		
Relevant community groups in the area	NA.		
Local government	Various	Various, via Scheme Amendment process and subsequent meetings.	No issues.
Department of Planning	Various	Various, via Scheme Amendment process.	Scheme Amendment for proposed uses supported.
Department of Water	By sub-consultant – dates unknown.		No issues.
Department of Environment and Conservation	NA.		
Department of Education	NA.		
Department of Indigenous Affairs	NA.		
Main Roads Western Australia	By sub-consultant – dates unknown.	Unknown.	No issues.
Heritage Council	NA.		
Department of Transport	Nil.		
Department of Health	NA.		
Public Transport Authority	NA.		
Environmental Protection Authority	NA.		
Western Power	By sub-consultant – dates unknown.	Unknown.	No issues.
Alinta Gas	By sub-consultant – dates unknown.	Unknown.	No issues.
Water Corporation	By sub-consultant – dates unknown.	Unknown.	No issues.
Telstra	By sub-consultant – dates unknown.	Unknown.	No issues.
Non-government school providers	NA.		
Department for Community Development	NA.		
Department of Sports and Recreation	NA.		
Department of Agriculture and Food Western Australia	NA.		
Fire and Emergency Services Authority	NA.		

2. SITE CONDITIONS AND CONSTRAINTS

A Context and Constraints Plan (refer **Figure 5**) has been prepared to illustrate the main issues discussed in this section of the LSP.

2.1 BIODIVERSITY AND NATURAL AREA ASSETS

The majority of the site comprises managed grassland with some stands of mature trees. The balance of the land (comprising approximately 1.9562ha) has been developed for retail and residential uses and has been cleared, paved and/or landscaped accordingly.

Given that there is no native understory remaining across the site, the vegetation is likely to be considered degraded or completely degraded, and therefore, of little conservation significance or biological value. Additionally, given that the land is surrounded on its northern, eastern, [and to an extent] southern sides by mixed business/commercial development, there is limited opportunity to form ecological linkages with the adjacent reserve.

2.2 LANDFORM AND SOILS

The land slopes gently from a low point of approximately 20m Australian Height Datum (mAHD) in the north western corner of the site to a high point of approximately 25mAHD in the south eastern corner of the site.

The Geological Survey of WA Map indicates that the site is made up of Bassendean sand, which comprises quartz sand (dunes) and swamp and lacustrine deposits, peat, and peaty sand and clay.

2.2.1 ACID SULFATE SOIL RISK

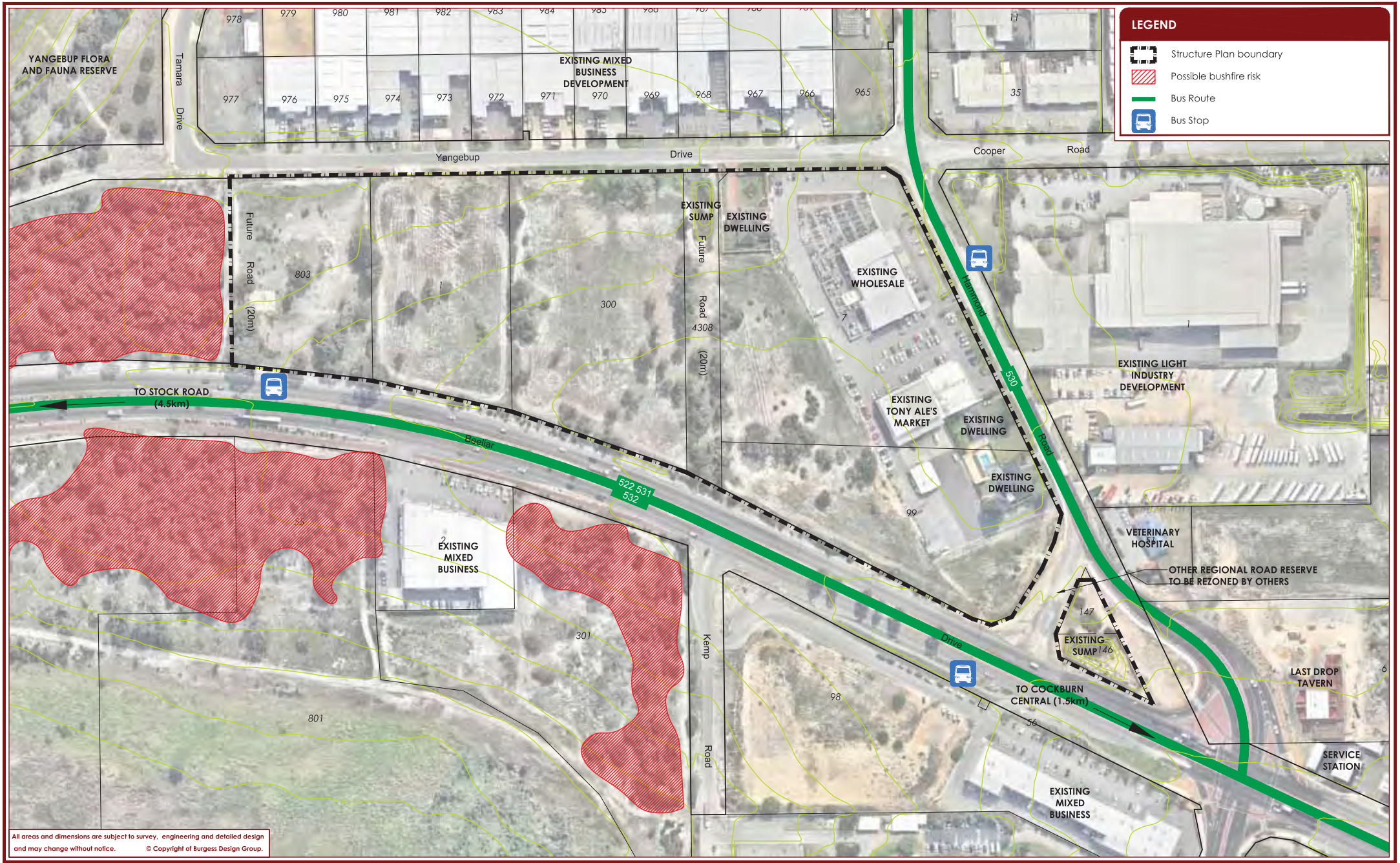
WAPC mapping identifies the site as having a '*moderate to low risk of Acid Sulfate Soils occurring within 3m of natural soil surface but high to moderate risk of ASS beyond 3m of the natural soul surface*'. As such, if significant earthworks are proposed at subsequent development stages, an ASS investigation may be required.

2.3 GROUNDWATER

The Department of Water's Perth Groundwater Atlas indicates that groundwater occurs at a depth of approximately 4-7m below surface level, and flows in a westerly direction towards Yangebup Lake. This depth is considered sufficient so as not to warrant the importation of significant fill across the site.

2.4 SURFACE WATER

A review of contour mapping and aerial imagery indicates that surface water flows across the site in a westerly direction toward Yangebup Lake. The land accommodates a drainage basin on Lot 146, and another minor basin in the northern portion of Lot 4308. The site is otherwise devoid of any surface water features, and it is understood that the majority of rainfall events are currently accommodated on site through infiltration, or suitable soak wells for the developed portions of the land.



NORTH

0 20 40 60 80 100m

SCALE 1:2000 (A3)

FIGURE 5: OPPORTUNITIES & CONSTRAINTS

HAMMOND ROAD NORTH

COCKBURN CENTRAL

CITY OF COCKBURN

BURGESS DESIGN GROUP
TOWN PLANNING + URBAN DESIGN
PO Box 8779, Perth Business Centre 6849
www.burgessdesigngroup.com.au
P (08) 9328 6411
F (08) 9328 4062

Plan No: ALE COC 9-01 Client: ALE'S
Date: 22.10.18 Planner: MS/MB

2.5 BUSHFIRE HAZARD

There may be some bushfire hazard associated with vegetation to the west and south of the site, contained within the Yangebup Flora and Fauna Reserve and the Beeliar Regional Park.

State Planning Policy 3.7 aims to minimise the risk to life and property caused by bushfire through the implementation of various policy objectives and measures via the *Planning for Bushfire Risk Management Guidelines*. These Guidelines specify requirements for bushfire hazard assessments and bushfire management plans for land identified as being bushfire prone. These plans typically outline specific built form requirements for residential uses under AS3959 (generally comprising BAL construction standards and setbacks), along with various access requirements and evacuation plans if relevant.

As the proposed uses comprise commercial, retail, and mixed business (i.e. non residential uses), the requirements of AS3959 will not apply. As such, there is limited merit in preparing a bushfire hazard assessment or management plan at the Structure Plan stage, as the issues outlined therein will have no bearing on the siting of structures or suitability of land use. Thus, a bushfire hazard assessment and/or bushfire management plan will be required at either the subdivision or development application stage, whichever comes first. This will enable the formulation of detailed evacuation measures once specific access arrangements are known.

2.6 HERITAGE

A search of the Department of Aboriginal Affair's Land Enquiry System and the City of Cockburn's Municipal Heritage Inventory revealed no registered heritage sites within the LSP area.

3. LAND USE AND SUBDIVISION REQUIREMENTS

3.1 LAND USE

The Structure Plan aims to provide for a mixture of commercial and retail uses that will provide for the daily and weekly shopping needs and services of surrounding residents.

Land use permissibility shall be in accordance with the Scheme for the applicable zoning, together with any provisions of future Local Development Plans prepared over the site. Built form outcomes and access arrangements shall be determined through the preparation of a Local Development Plan (see Section 3.2 for more detail).

3.1.1 LOCAL CENTRE

The Local Centre zone is 3.5533ha, and aims to provide for convenience retailing, local offices, health, welfare and community facilities.

The Local Centre zone could potentially accommodate the existing wholesale uses currently located in the eastern portion of the site, together with a redeveloped Tony Ale's Fresh Food Market, as well as a range of retail and office uses and a possible medical centre.

Small-format retail is expected to be concentrated along the proposed main street, with larger premises (such as Tony Ale's and wholesale uses) to be located behind. This approach is demonstrated in the Concept Plan contained at **Figure 6**.

Careful consideration shall be given to the specific siting and built form outcomes of development through the preparation of a Local Development Plan (see Section 3.2 for more detail).

3.1.2 MIXED BUSINESS

The Mixed Business zone is 3.2763ha, and aims to provide for a wide range of light and service industrial, wholesaling, showrooms, trade and professional services, which, by reason of their scale, character, operation or land requirements, are not generally appropriate to, or cannot conveniently or economically be accommodated within the Centre or Industry zones.

The Mixed Business zoning reflects the existing uses directly to the north of the site, and aims to provide a transition between those uses and the proposed retail uses. The Concept Plan contained at **Figure 6** demonstrates a potential solution, whereby light industrial uses fronting Yangebup Road back on to Showroom Uses facing Beeliar Drive which then lead to the retail, wholesale and possible health services shown in the eastern portion of the site. This effectively provides a transition from business/industry-based activity to retail-based activity whilst minimising any land use or movement conflicts between the two.

Specific interface treatments shall be determined through the preparation of a Local Development Plan (see Section 3.2 for more detail).

3.2 LOCAL DEVELOPMENT PLANS

All development on the site shall generally be in accordance with a Local Development Plan (LDP).

Local Development Plan/s will be prepared for the Structure Plan area pursuant to the WAPC's Local Development Plan Framework and the Schedule 2 Part 6 'Deemed Provisions for Local Planning Schemes' of the *Planning and Development (Local Planning Schemes) Regulations 2015*. To inform the subdivision and/or development stages, the Local Development Plan/s will encompass all the Structure Plan area and as a minimum each Local Development Plan is to respond to the following intended outcomes:

i. Built form in terms of location, orientation, bulk, scale, and height of buildings;
ii. Mix of land uses;
iii. Vehicle access, vehicle parking, pedestrian and cyclist movements;
iv. Provision of end of trip facilities and improvements to access and facilities for pedestrians and cyclists;
v. Street interface treatments along the 'main street' and Beeliar Drive.

3.2.1 Development Applications

An LDP should be prepared over the site, or relevant portion of the site, prior to development approval being granted.

3.3 MOVEMENT NETWORKS

The Structure Plan proposes a new main street, extending from the intersection of Beeliar Drive and Kemp Road north to Yangebup Road through the centre of the site, and an internal movement network with access points to Beelier Drive, Hammond Road, and Yangebup Road. This arrangement will provide ample access to and throughout the site.

Transcore prepared a Transport Assessment Report over the subject site which can be found attached at **Appendix 2**, a summary of which is provided in the subsequent sections. This assessment is based upon land use distribution and access arrangements shown in the Concept Plan contained at **Figure 6**. It should be noted that the final layout of the site, including access arrangements, will be set out in a Local Development Plan.

3.3.1 EXISTING ROAD NETWORK

A summary of the existing road network is provided in **Table 5** below:

TABLE 5: EXISTING ROAD NETWORK

Road	Cross-section	Speed Limit	Road Classification
Beeliar Drive	Dual carriageway, with shared path on southern side	70km/h	District Distributor A Road
Hammond Road	8m single carriageway	60km/h	District Distributor B
Yangebup Road	8m single carriageway	50km/h	Access Road

3.3.2 TRAFFIC IMPACTS

The estimated daily traffic impact impacts arising from the proposed development are summarised in **Table 6** below:

TABLE 6: SUMMARY OF TRAFFIC IMPACTS

Road Sections	Total Daily Traffic (vpd)			Impact (%)
	Existing	LSP	Total	
Yangebup Rd (W of Hammond Rd)	800	1,360	2,160	170%
Hammond Rd (N of Yangebup)	13,000	1,840	14,840	14%
Hammond Rd (S of Beeliar Dr)	11,200	620	11,820	5.5%
Beeliar Dr (W of LSP)	31,000	1,360	32,360	4.4%
Beeliar Dr (E of Hammond Rd)	27,600	1,360	28,960	4.9%

The *WAPC Transport Assessment Guidelines* (2016) provide that an increase in traffic of less than 10 per cent is generally not considered to have a material impact, and thus does not require further assessment. Other than Yangebup Road and Hammond road (north of Yangebup Road), the proposed development will not cause an increase in traffic flow beyond this threshold.

Yangebup Road is currently significantly underutilised, and even with the addition of the traffic generated from the development, is only predicted to reach 72% of its capacity. As such, Yangebup Road is considered to have sufficient capacity to accommodate the predicted traffic generated by the development.

Hammond Road (north of Yangebup Road) is estimated to carry 13,000 vehicles per day at present, increasing to 15,000 vehicles per day with the addition of traffic generated by the development. This daily volume is within the capacity threshold of a District Distributor B and the physical threshold of a two-lane single carriageway road.

3.3.3 FUTURE ROAD NETWORK

Proposed changes to the road network include:

- A new main street linking Beeliar Drive and Yangebup Road, bisecting the site;
- Upgrading the intersection of Hammond Road, Yangebup Road and Cooper Road;
- Consolidating the existing crossovers to Hammond Road into a single left-in/left-out crossover;
- A new crossover to Beeliar Drive and Yangebup Road; and
- An integrated internal movement network.

A number of additional crossovers and/or service laneways may also be provided as required to ensure the safe and efficient movement of vehicles throughout the site. As access arrangements will not be finalised until a Local Development Plan has been prepared, some minor changes may occur.

3.3.4 HAMMOND ROAD LEFT-IN/LEFT-OUT

A suitable design treatment shall be required at the proposed left-in/left-out intersection to Hammond Road to facilitate safe and controlled access.

It is envisaged this will involve the construction of a left-turn slip lane to minimise any impacts on the operation of northbound traffic along Hammond Road. Additionally, it is understood the City of Cockburn expects a median treatment to be provided on Hammond Road to physically reinforce the left-in/left-out treatment and that a simple seagull island treatment is not sufficient.

3.3.5 HAMMOND ROAD/COOPER ROAD/YANGEBUP ROAD INTERSECTION

The intersection of Hammond Road, Yangebup Road, and Cooper Road is required to be upgraded to maintain an acceptable level of service and standard of safety. SIDRA analysis indicates this upgrade will maintain an excellent level of service (LOS A) in both AM and PM peak periods through to year 2026. This upgrade is expected to require land acquisition for road widening to accommodate a treatment that meets *Restricted Access Vehicle – Network 4* standards.

Cost contribution arrangements shall be agreed with the City to fund the upgrade. It is understood the City's expectation is that this cost be met in full by the developer because the upgrade is required to address issues related to the development of the Structure Plan Area and would otherwise not be needed.

The City of Cockburn also expects that a detailed design review will be required to assess the feasibility and demand for Restricted Access Vehicle movements along the intersecting roads, and to determine the extent of road widening required.

3.3.6 UPGRADING OF YANGEBUP ROAD

Yangebup Road is currently constructed as a single carriageway, two-way rural road, and will need to be upgraded to an urban standard, with appropriate kerbing, drainage, paths, and possibly embayed parking, as part of any future development of abutting land.

The City of Cockburn expects this upgrade to be undertaken by the developer.

3.3.7 PUBLIC TRANSPORT

There are several bus services operating along Beeliar Drive and Hammond Road, with bus stops within a 5-10min walking distance from the LSP area. A summary of these services is provided in **Table 7** below:

TABLE 7: BUS SERVICES

Bus Service	Route
522	Cockburn Central Train Station/Phoenix Shopping Centre
530	Cockburn Central Train Station/Fremantle Train Station
531	Cockburn Central Train Station/Fremantle Train Station
532	Cockburn Central Train Station/ Fremantle Train Station

These services provide excellent access to both Cockburn Central and Fremantle Train Stations, linking the site to important local and regional destinations.

3.3.8 PEDESTRIAN AND BIKE NETWORK

The Perth Bike Map series published by the Department of Transport shows local roads around the site have good road riding environments.

Additionally, a shared path is located along the southern side of Beeliar Drive connecting to the Principal Shared Path along the Kwinana Freeway approximately 1.6km east of site. There is also a shared path (recreational path) in place along the perimeter of Yangebup Lake that connects to the residential areas located west of the Lake.

A new shared path will be constructed within the southern verge of Yangibup Road and the northern verge of Beeliar Drive, and an existing path along Hammond Road will be upgraded to a shared path standard where each abuts the LSP area.

Notwithstanding what is shown on the Concept Plan, the City's expectation is that any new pedestrian crossings along Beeliar Drive must be given approval in principle by Main Roads WA.

3.3.9 PARKING

The total parking provision requirements for the LSP area will be finalised at the development approval stage once final floor areas are known.

Notwithstanding the above, the Concept Plan contained at **Figure 6** provides for approximately 1,022 bays distributed in several parking clusters over the LSP area. Based on preliminary calculations, the parking supply shown conforms with the City's Scheme requirements.

3.4 WATER MANAGEMENT

3.4.1 URBAN WATER MANAGEMENT PLAN

An Urban Water Management Plan will be required as a condition of subdivision approval in accordance with the WAPC's *Better Urban Water Management* document.

3.4.2 STORMWATER MANAGEMENT

A Stormwater Drainage Strategy will be prepared for the site, and will ensure that:

- All catchment runoff is retained up to and including the 1 in 20 year ARI event within the development area;
- 1 in 100 year events will be discharged via the road network to the district drainage system; and
- Stormwater from the 1-20 year events is retained and infiltrated on individual sites in keeping with the City's commercial stormwater discharge principles.

In order to minimise the runoff from individual lots, soakwells or other appropriate soakage systems will need to be provided within the lots. These will be designed to have the capacity to infiltrate and retain stormwater runoff generated from a 1 in 1 year storm event with appropriate first flush capture and overflow (either direct or by surface grading) to the road drainage network during storm events greater than 1 in 20 year return period.

3.4.3 WASTEWATER DISPOSAL

Based on preliminary discussions with the Water Corporation, all lots within the proposed development area will be connected to the existing sewerage system available on all common boundaries with adjacent land holdings.

All internal sewer reticulation pipework will be designed and constructed to the standards and requirements of the Water Corporation of Western Australia.

3.5 RETAIL ASSESSMENT & EMPLOYMENT

A retail sustainability assessment prepared by Tactiks4 (refer **Appendix 3**) indicates that the subject site can sustain 8,100m² of retail/shop uses, comprising the following net lettable areas:

- 3,300m² of Supermarket; and,
- 4,800m² of shop/retail.

The proposed development will effectively capitalise on the significant residential growth expected in the catchment area; thereby providing for a range of services and employment opportunities that complement existing uses in nearby centres without compromising the continued implementation and sustainability of those centres.

The development is expected to deliver 648 jobs in total, or 562 jobs in addition to the 87 already provided. The proposed development is also expected to significantly contribute to employment diversity in the area, with the reliance on industrial floorspace falling from 96% to 77% of total floorspace in the Jandakot West Industrial Precinct. Additionally, the employment profile within the site itself is expected to reduce its reliance on shop floorspace; which is predicted to fall from 87% to 50% of floorspace, with industrial, bulky goods, and office uses providing additional employment bases.

3.6 INFRASTRUCTURE COORDINATION, SERVICING AND STAGING

An Engineering Servicing Report was prepared over the site in 2016 by Peritas Group (refer **Appendix 4)**. The report confirms that there are no identified servicing constraints that prevent the land from being developed. A summary of this report is provided in the proceeding sections.

3.6.1 WATER

Existing services are present in the surrounding area, which will be extended to service future development as needed. All internal water reticulation pipework will be designed and constructed to the standards and requirements of the Water Corporation of Western Australia.

3.6.2 POWER

It is anticipated that all future development will be serviced with underground power. This system will connect to the existing overhead/underground network located in adjoining roads.

3.6.3 TELECOMMUNICATIONS

Information from Telstra indicates there is a service network within the surrounding area. It is anticipated that all lots within the proposed development will be served with Telstra Telecommunication services.

3.6.4 GAS

ATCO Gas has advised that reticulated gas services are available in the surrounding area.

It is anticipated that this network will have sufficient capacity to service the development with reticulated gas services by extension of two existing mains.

3.7 DEVELOPER CONTRIBUTION ARRANGEMENTS

Development within the Structure Plan area will not generate a need for any major new infrastructure items. As such, no developer contribution arrangements will be needed.

The site falls within the City-wide Development Contribution Plan 13 (DCP13). As DCP13 applies only to new dwellings, it will not have any effect on the proposed development.

FIGURE 6: CONCEPT SITE PLAN
HAMMOND ROAD NORTH
COCKBURN CENTRAL

CITY OF COCKBURN

burgess design group
TOWN PLANNING + URBAN DESIGN
PO Box 374 Northbridge WA 6865
W www.burgessdesigngroup.com.au
P (08) 9328 6411
F (08) 9328 6511

Plan No: ALE COC 1-05c-01 Client: Tony & John Allessandrini
Date: 22.10.18 Planner: MS

NORTH

0 10 20 30 40 50 60 70m
SCALE 1:1,500 (A3)

4. CONCLUSION

The Structure Plan as described in this report satisfies the planning frameworks adopted by the City of Cockburn and the Western Australian Planning Commission, and the advice received during consultation with other agencies.

The proposed retail and commercial development has been shown to be an ideal and timely addition to the area, and will provide for a range of goods services that meet the demands of the local community and which complement the functions of the wider Cockburn Central Activity Centre. To that end, the Structure Plan utilises a combination of 'Local Centre' zone and 'Mixed Business' zone to accommodate a range of retail, office, showroom, and light industrial uses, which together will form a cohesive and vibrant centre that will provide up to 27,350m² of net letable area.

In light of the information presented herein, the Structure Plan represents a logical and well planned addition to the ongoing development of the wider Cockburn Central Activity Centre.

APPENDIX 1

CERTIFICATE OF TITLES

REGISTER NUMBER	
1/DP59832	
DUPLICATE EDITION	DATE DUPLICATE ISSUED
1	9/8/2010

WESTERN AUSTRALIA

RECORD OF CERTIFICATE OF TITLE

VOLUME 2702 FOLIO 759

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 1 ON DEPOSITED PLAN 59832

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

ANTONIO ANSELMO ALESSANDRINI
IN 1/4 SHARE
ANGELO LUCIANO ALESSANDRINI
IN 1/4 SHARE
CATINA CHRISTINA ALESSANDRINI
IN 1/4 SHARE
JOHN ALESSANDRINI
IN 1/4 SHARE
ALL OF 86 HAMMOND ROAD, COCKBURN CENTRAL
AS TENANTS IN COMMON

(T L293690) REGISTERED 21 APRIL 2010

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. G451638 EASEMENT BENEFIT FOR RIGHT OF CARRIAGEWAY PURPOSES - SEE SKETCH ON VOL 2102 FOL 798. REGISTERED 21.5.1997.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	DP59832 [SHEET 1].
PREVIOUS TITLE:	2214-668.
PROPERTY STREET ADDRESS:	LOT 142 YANGEBUP RD, COCKBURN CENTRAL.
LOCAL GOVERNMENT AREA:	CITY OF COCKBURN.

VERSION	AMENDMENT	AUTHORISED BY	DATE
2	AUDIT REQUIREMENTS	E. Horlin	4/9/08

LandSurveys
LICENSED AND ENGINEERING SURVEYORS
PROJECT DEVELOPMENT CONSULTANTS

TYPE: FREEHOLD
PURPOSE: SUBDIVISION
PLAN OF

LOTS 1, 2, AND EASEMENTS

DISTRICT: COCKBURN SOUND
TOWNSITE
SSA - NO

FILE
LOCALITY: COCKBURN CENTRAL/ SUCCESS
LOCAL AUTHORITY: CITY OF COCKBURN

FORMER TENURE: LOT 142, DP 27926, CT 2214/668

INDEX: ON BG34 (2) 12.06, BG34 (2) 12.05
FIELD BOOK: 106895

SCALE 1 : 1250 @ A2
ALL DISTANCES ARE IN METRES

SURVEYOR'S CERTIFICATE - Reg 54
I, Eric Horlin
2008.09.10 17:01:10 +08'00'
LICENSED SURVEYOR / DATE

SURVEY FIRM: LandSurveys

LODGED
DATE 20-Aug-08
FEE PAID $305.00
ASSESS No. 4206133

TYPE OF VALIDATION
FULL AUDIT
LEGAL COMPONENT B.GILLIGAN
DOCKET PLAN/DIAGRAM 03117-07-V10
CERTIFIED CORRECT
I.S.C.
F.S.C.

APPROVED BY WESTERN AUSTRALIAN PLANNING COMMISSION
FILE 132216
DATE 26/9/2008

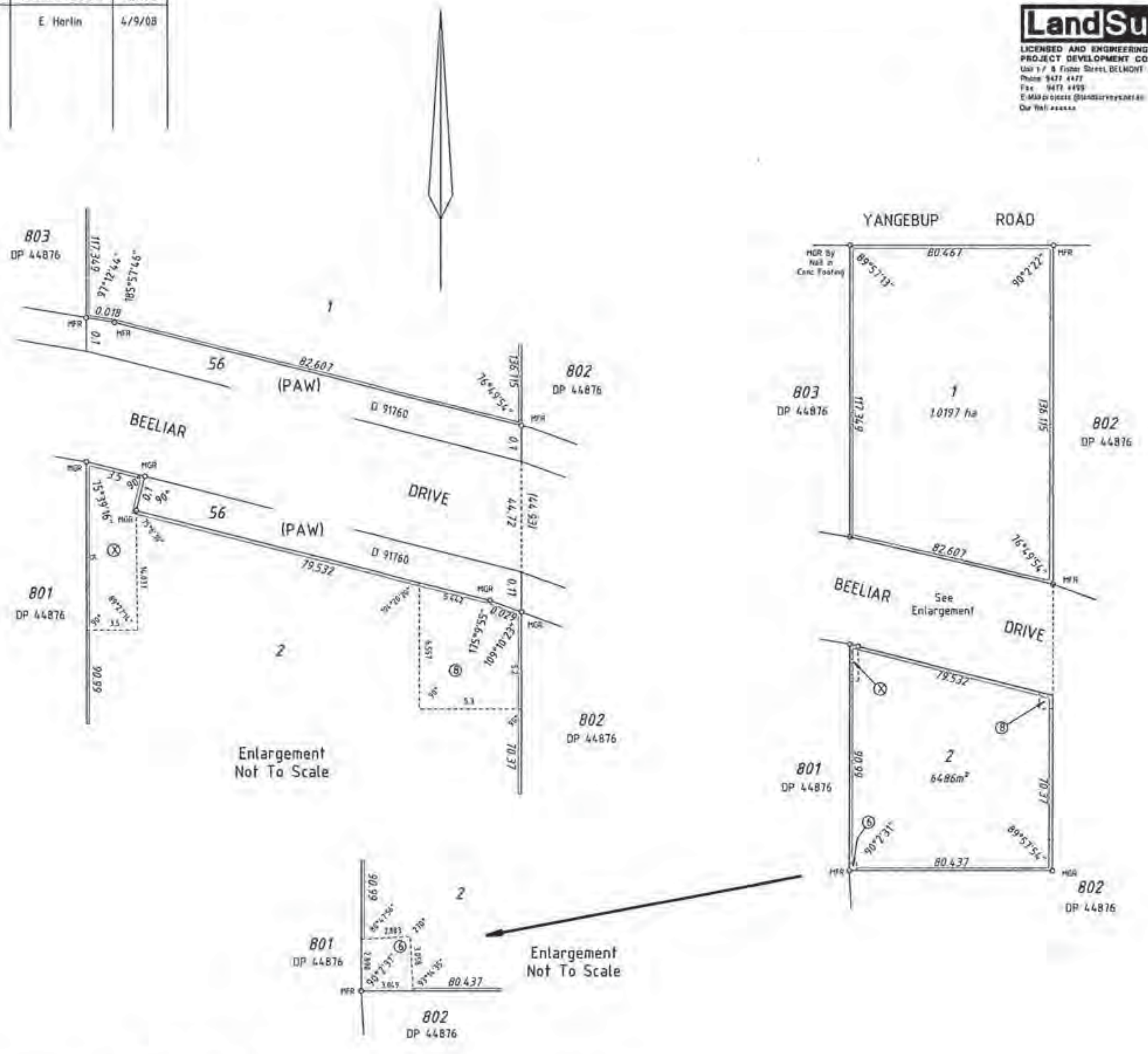
IN ORDER FOR DEALINGS
SUBJECT TO: SEC 167 P+D ACT
29.9.08
INSPECTOR OF PLANS & SURVEYS / AUTHORIZED LAND OFFICER — DATE

APPROVED
APPROVED 15.10.08
INSPECTOR OF PLANS & SURVEYS / AUTHORIZED LAND OFFICER — DATE

Landgate
Western Australian Land Information Authority

DEPOSITED PLAN
59832
ORIGINAL
SHEET 1 OF 1 SHEETS
VERSION 2

A2 ORIGINAL



SCALE 1 : 1250
ALL DISTANCES ARE IN METRES

NOTE Z. THE DIMENSIONS AND POSITION OF THIS EASEMENT ARE BASED ON ACCURATE SURVEYED ALIGNMENTS

Drafted By: Cadastral Cartographics
PO Box 467, North Perth, 6906
Ph 9228 1133 Fax 9228 1233

DP 59832

INTERESTS AND NOTIFICATIONS

SUBJECT	PURPOSE	STATUTORY REFERENCE	ORIGIN	LAND BURDENED	BENEFIT TO	COMMENTS
ⓧ	EASEMENT		DOC G451640	LOT 2	PT LOT 801 & LOT 803 ON DP 44876 (FORMERLEY LOT 9 ON D 21410)	SEE NOTE Z
ⓢ	EASEMENT (SEWERAGE)	SEC 167 P&D ACT REG 6	THIS PLAN	LOT 2	WATER CORPORATION	
ⓔ	EASEMENT (UNDERGROUND ELECTRIC)	SEC 167 P&D ACT REG 8	THIS PLAN	LOT 2	ELECTRICITY NETWORKS CORPORATION	

REGISTER NUMBER	
7/D25994	
DUPLICATE EDITION	DATE DUPLICATE ISSUED
N/A	N/A

WESTERN AUSTRALIA

RECORD OF CERTIFICATE OF TITLE

VOLUME 1250 FOLIO 932

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

REGISTRAR OF TITLES

LAND DESCRIPTION:

LOT 7 ON DIAGRAM 25994

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

CATINA CHRISTINA ALESSANDRINI OF HAMMOND ROAD, JANDAKOT
(T T12056/1961) REGISTERED 16 AUGUST 1961

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1.	A411178	MORTGAGE TO AUSTRALIA & NEW ZEALAND BANKING GROUP LTD REGISTERED 22.6.1971.
2.	C441427	MORTGAGE TO AUSTRALIA & NEW ZEALAND BANKING GROUP LTD REGISTERED 22.10.1982.
3.	*J850127	CAVEAT BY NEPTUNES SEAFOOD (WA) PTY LTD AS TO PORTION ONLY LODGED 27.7.2006.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
Lot as described in the land description may be a lot or location.

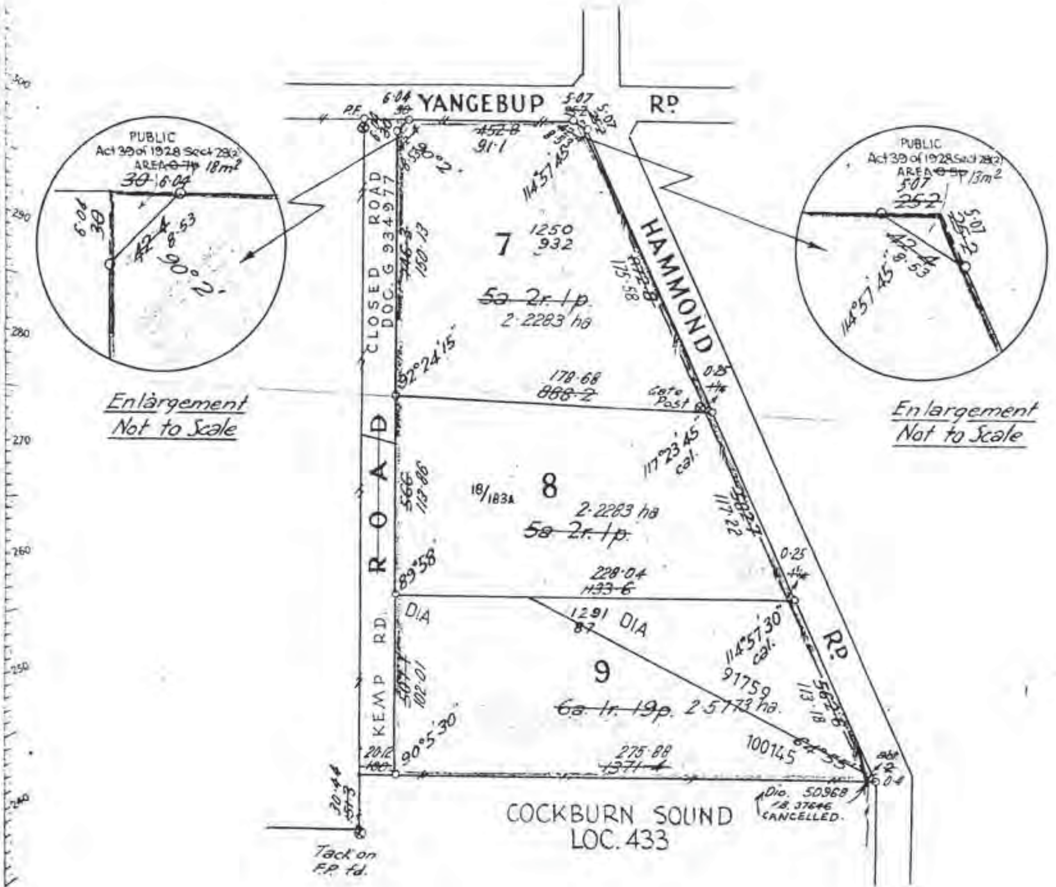
----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	1250-932 (7/D25994).
PREVIOUS TITLE:	1095-453.
PROPERTY STREET ADDRESS:	86 HAMMOND RD, COCKBURN CENTRAL.
LOCAL GOVERNMENT AREA:	CITY OF COCKBURN.

Town or District.	Number of Lot or Location.	Field Book.	Scale	Certificate in which Land is Vested.	Area
JANDAKOT	PART OF A.A. LOT 233	19822	1:3158 ~~4 Chains to one inch~~	Vol.1095 Fol.453	~~A. R. P.~~ ~~17 1 21.8 Green~~ ~~1.2 Brown~~ ~~17 1 22.2 Total~~



DIA 25994

IN ORDER FOR DEALINGS

CT

CERTIFICATE

I hereby certify that this survey was performed by me personally (or under my personal supervision, inspection, and field check), in strict accordance with the Regulations for the guidance of Surveyors, and that this plan is in all respects accurate.

Licensed Surveyor.

Date 27-7-60

Approved by Town Planning Board

Chairman

Date 9/8/60

Approved	On	Registered	Diagram No.
Inspector of Plans and Surveys. Examined 2-8-61 Date 16/8/61	Plan / Diagram / Index Plan ~~5467~~ PERTH 5000 05.02	1-2-0	25994

G.P. Col Bk 4 p46

Dk+ 21410

REGISTER NUMBER	
99/DP57197	
DUPLICATE EDITION	DATE DUPLICATE ISSUED
1	5/5/2008

WESTERN AUSTRALIA

RECORD OF CERTIFICATE OF TITLE

VOLUME 2688 FOLIO 903

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 99 ON DEPOSITED PLAN 57197

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

ANTONIA ANSELMO ALESSANDRINI
ANGELO LUCIANO ALESSANDRINI
JOHN ALESSANDRINI
CATINA ALESSANDRINI
ALL OF LOT 7 HAMMOND ROAD, JANDAKOT
AS TENANTS IN COMMON IN EQUAL SHARES

(AF K574859) REGISTERED 23 APRIL 2008

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. *K574857 NOTIFICATION SECTION 165 PLANNING & DEVELOPMENT ACT 2005 LODGED 23.4.2008.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

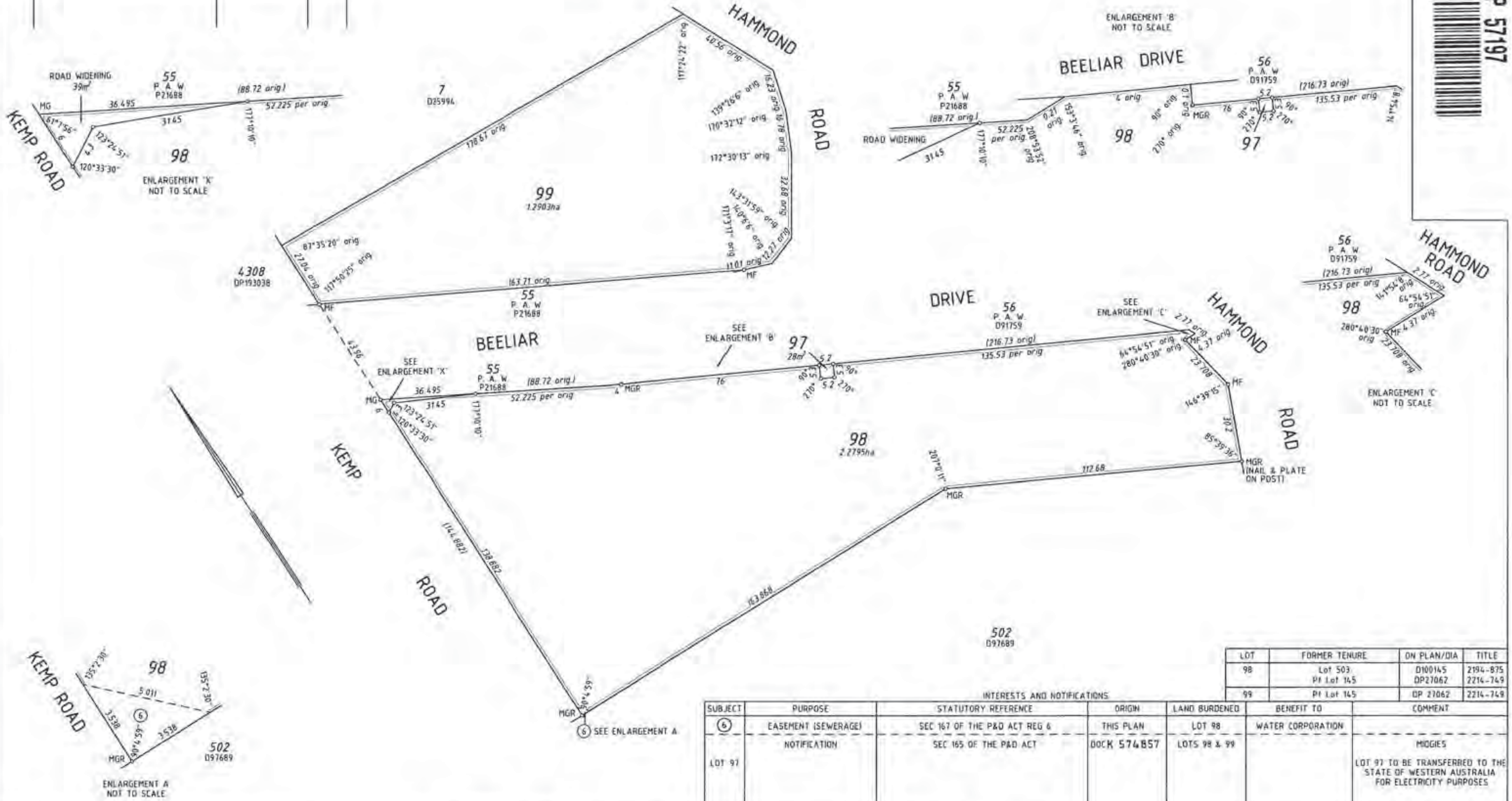
STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	DP57197 [SHEET 1].
PREVIOUS TITLE:	2214-749.
PROPERTY STREET ADDRESS:	88 HAMMOND RD, COCKBURN CENTRAL.
LOCAL GOVERNMENT AREA:	CITY OF COCKBURN.

DP 57197

VER	AMENDMENT	AUTHORISED BY	DATE



LOT	FORMER TENURE	ON PLAN/DIA	TITLE
98	Lot 503 Pt Lot 145	D100145 DP27062	2194-875 2214-749
99	Pt Lot 145	DP 27062	2214-749

INTERESTS AND NOTIFICATIONS

SUBJECT	PURPOSE	STATUTORY REFERENCE	ORIGIN	LAND BURDENED	BENEFIT TO	COMMENT
(6)	EASEMENT (SEWERAGE)	SEC 167 OF THE P&D ACT REG 6	THIS PLAN	LOT 98	WATER CORPORATION	
LOT 97	NOTIFICATION	SEC 165 OF THE P&D ACT	DOCK 574857	LOTS 98 & 99		MOGIES LOT 97 TO BE TRANSFERRED TO THE STATE OF WESTERN AUSTRALIA FOR ELECTRICITY PURPOSES

TYPE Freehold
PURPOSE Subdivision
PLAN OF

LOTS 97, 98, 99, EASEMENT AND ROAD WIDENING

SSA No

DISTRICT JANDAKOT A.A (COCKBURN SOUND)
TOWNSITE
FILE
LOCALITY BEELIAR/COCKBURN CENTRAL
LOCAL AUTHORITY CITY OF COCKBURN

FORMER TENURE: SEE TABLE
INDEX: BG34 (2) 12.05
FIELD BOOK: 103778

SCALE 1:1000@A2 — 0m 20 40 60 80 100 — ALL DISTANCES ARE IN METRES

SURVEYOR'S CERTIFICATE – Reg 54
I WJ FRANCE hereby certify that this is a correct representation of the – (a) survey; and/or (b) calculations from measurements, undertaken for the purposes of this plan and that it complies with the relevant written law(s) in relation to which it is lodged.

2007.12.13 14:30:56 +09'00'
Licensed Surveyor — Date

BROOK MARSH PTY LTD LICENSED SURVEYORS ph 9398 2441 fax 9490 1313 P.O. BOX 51 GOSNELLS 6990

LODGED: 4-Dec-07
FEE PAID: $295.00
RECEIPT No: 3218850
TYPE OF VALIDATION: B.GILLIGAN 03117-07-V4 13/12/07

APPROVED BY WESTERN AUSTRALIAN PLANNING COMMISSION
FILE 130162
DELEGATED UNDER S.16 P&D ACT 2005 DATE 19/12/07

IN ORDER FOR DEALINGS
SUBJECT TO Two Owners, Secs 165, 167 & 168(3) P&D Act & Transfer of Lot 97 to State of W.A.
FOR INSPECTOR OF PLANS & SURVEYS / AUTHORISED LAND OFFICER — 20.12.07 DATE

APPROVED
Approved — 23/04/2008
INSPECTOR OF PLANS & SURVEYS / AUTHORISED LAND OFFICER — DATE

Landgate
Western Australian Land Information Authority
DEPOSITED PLAN
57197
ORIGINAL
SHEET 1 OF 1
VERSION 1

REGISTER NUMBER	
146/D91759	
DUPLICATE EDITION	DATE DUPLICATE ISSUED
N/A	N/A

WESTERN AUSTRALIA

RECORD OF CERTIFICATE OF TITLE

VOLUME 2189 FOLIO 263

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 146 ON DIAGRAM 91759

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

CITY OF COCKBURN OF 9 COLEVILLE CRESCENT, SPEARWOOD
(T H412381) REGISTERED 6 APRIL 2000

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	2189-263 (146/D91759).
PREVIOUS TITLE:	1291-87.
PROPERTY STREET ADDRESS:	LOT 146 HAMMOND RD, COCKBURN CENTRAL.
LOCAL GOVERNMENT AREA:	CITY OF COCKBURN.

LT 175

Application H412379

Volume 1291 Folio 87

WESTERN AUSTRALIA

VOLUME 2189 FOLIO 263

IN THE REGISTER

CERTIFICATE OF TITLE

UNDER THE " TRANSFER OF LAND ACT, 1893 " AS AMENDED

The person described in the First Schedule hereto is the registered proprietor of the undermentioned estate in the undermentioned land subject to the easements, encumbrances and notices shown in the Second Schedule hereto.

Dated 6th April, 2000

REGISTRAR OF TITLES

ESTATE AND LAND REFERRED TO

Estate in fee simple in portion of Jandakot Agricultural Area Lot 233 and being Lot 146 on Diagram 91759, delineated on the map in the Third Schedule hereto.

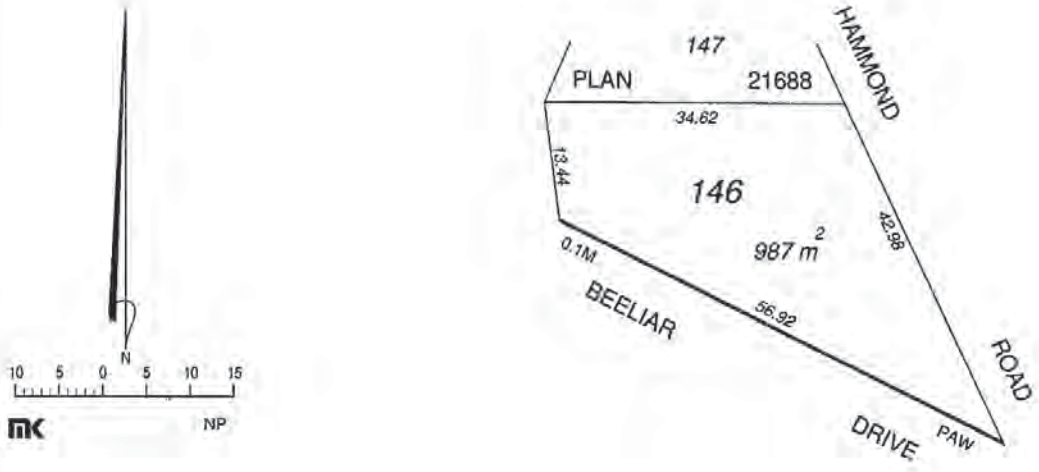
FIRST SCHEDULE (continued overleaf)

~~Anthony Scolaro of 1318 Hay Street, West Perth.~~

SECOND SCHEDULE (continued overleaf)

NIL

THIRD SCHEDULE



VOLUME 2189 FOLIO 263
IN THE REGISTER

FIRST SCHEDULE (continued) NOTE : ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS

PARTICULARS	INSTRUMENT NATURE	INSTRUMENT NUMBER	REGISTERED	TIME	SEAL & INITIAL
City of Cockburn of 9 Coleville Crescent, Spearwood.	Transfer	H412381	6.4.00	15.20	

SECOND SCHEDULE (continued)	REGISTERED or LODGED	TIME	SEAL & INITIAL	CANCELLATION NATURE	CANCELLATION NUMBER	REGISTERED or LODGED	SEAL & INITIAL

REGISTER NUMBER	
147/P21688	
DUPLICATE EDITION	DATE DUPLICATE ISSUED
N/A	N/A

WESTERN AUSTRALIA

RECORD OF CERTIFICATE OF TITLE

VOLUME 2214 FOLIO 609

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 147 ON PLAN 21688

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

CITY OF COCKBURN OF 9 COLEVILLE CRESCENT, SPEARWOOD
(T H780575) REGISTERED 18 JULY 2001

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
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----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	P21688 [SHEET 1].
PREVIOUS TITLE:	2214-608.
PROPERTY STREET ADDRESS:	LOT 147 HAMMOND RD, COCKBURN CENTRAL.
LOCAL GOVERNMENT AREA:	CITY OF COCKBURN.

REGISTER NUMBER	
802/DP44876	
DUPLICATE EDITION	DATE DUPLICATE ISSUED
1	16/6/2006

WESTERN AUSTRALIA

RECORD OF CERTIFICATE OF TITLE

VOLUME 2624 FOLIO 441

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 802 ON DEPOSITED PLAN 44876

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

ANTONIA ANSELMO ALESSANDRINI
ANGELO LUCIANO ALESSANDRINI
JOHN ALESSANDRINI
CATINA ALESSANDRINI
ALL OF LOT 7 HAMMOND ROAD, YANGEBUP
AS TENANTS IN COMMON IN EQUAL SHARES

(AF J756967) REGISTERED 24 MAY 2006

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1.	H922736	EASEMENT TO WATER CORPORATION - SEE DEPOSITED PLAN 44876 REGISTERED 9.11.2001.
2.	*H922737	CAVEAT BY CITY OF COCKBURN LODGED 9.11.2001.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
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Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

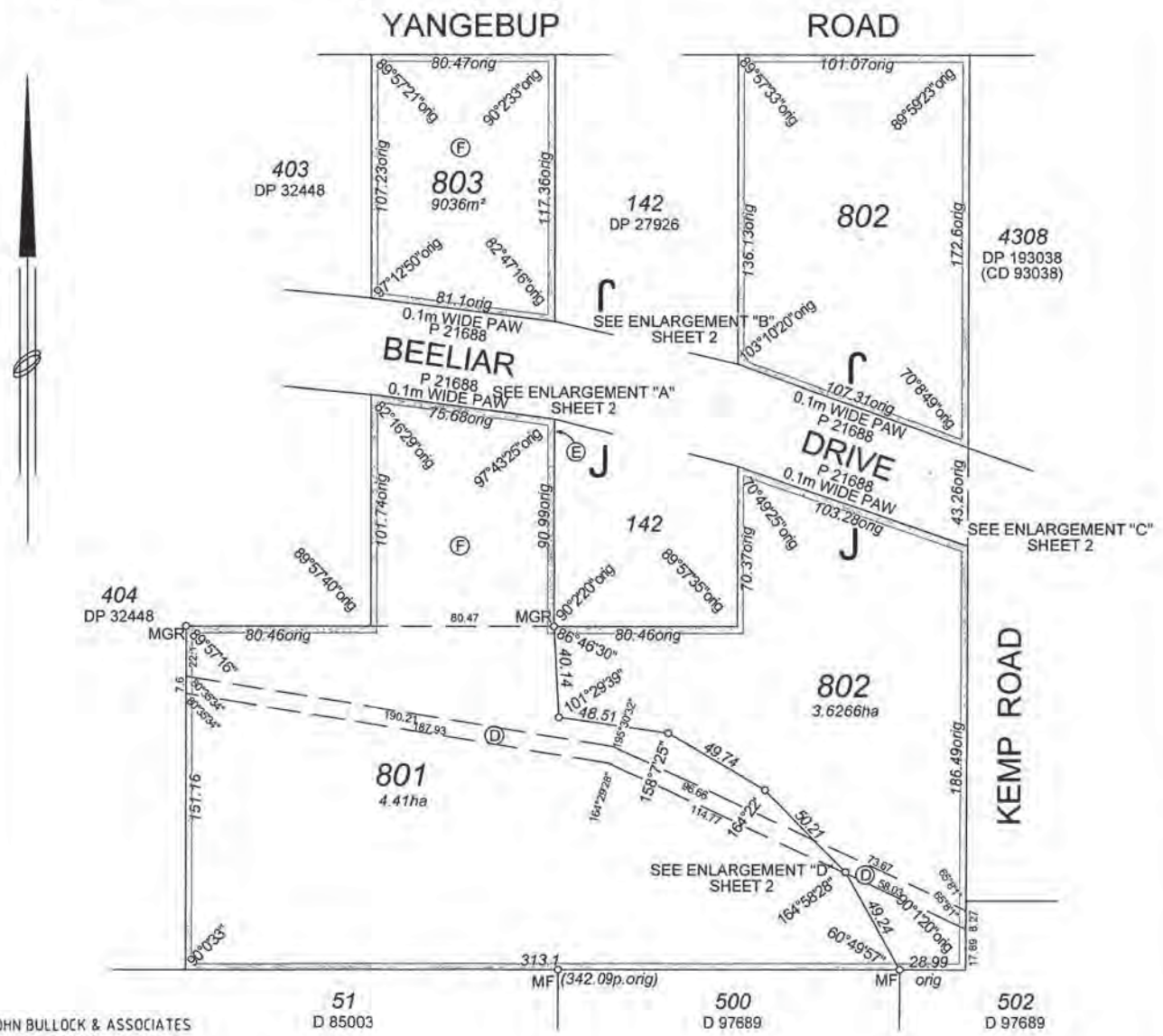
STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	DP44876 [SHEET 1,2].
PREVIOUS TITLE:	2214-669.
PROPERTY STREET ADDRESS:	LOT 802 YANGEBUP RD, COCKBURN CENTRAL.
LOCAL GOVERNMENT AREA:	CITY OF COCKBURN.

ED/VER	AMENDMENT	BY	DATE
2/1	REPLACEMENT PLAN LOT 803 ADDED	JLB	17/6/05
3/1	REPLACEMENT PLAN LOT 802 NOW INCLUDES WHOLE OF LOT 143 ON DP 27927	JLB	24/10/05

FOR INTERESTS AND NOTIFICATIONS SEE SHEET 2



JOHN BULLOCK & ASSOCIATES
Consulting Surveyors
12B PEPLER AVENUE
SALTER POINT WA 6152
PHONE (08) 9450 7188 FAX (08) 9450 7199
ABN 98 084 318 829

TYPE FREEHOLD

PURPOSE SUBDIVISION

PLAN OF

LOTS 801 - 803

DP 44876 (01)

SSA YES / NO

DISTRICT COCKBURN SOUND FILE

TOWNSITE

LOCAL AUTHORITY CITY OF COCKBURN

LOCALITY BEELIAR

FORMER TENURE	ON	FIELD BOOK
SEE TABLE SHEET 2	INDEX BG 34 (2) 12.05, 12.06	95786

SCALE: @ A3 1:2000 0 20 40 60 80 100
ALL DISTANCES ARE IN METRES

SURVEYOR'S CERTIFICATE - Reg 54

I JOHN BULLOCK hereby certify that this plan is a correct representation of the survey and /or calculations from measurements recorded in the field book lodged for the purposes of this plan and that it complies with the relevant written law(s) in relation to which it is lodged.

Licensed Surveyor Date

SURVEYOR'S CERTIFICATE - Compiled

I hereby certify that this compiled plan (a) is a correct and accurate representation of the survey(s) of the subject land ; and (b) is in accordance with the relevant law in relation to which it is lodged.

Licensed Surveyor Date

LODGED

DATE 21-Apr-05

FEE PAID $285.00

ASSESS No. 452924

TYPE OF VALIDATION

FULL AUDIT

LEGAL COMPONENT B.L.G.

DOCKET P45400

CERTIFIED CORRECT

I.S.C.

F.S.C.

SURVEY FIRM JOHN BULLOCK & ASSOC.

APPROVED BY WESTERN AUSTRALIAN PLANNING COMMISSION

FILE 807-2-23-190

DELEGATED UNDER S20 WAPC ACT 1985

DATE 22-11-2005

IN ORDER FOR DEALINGS

SUBJECT TO

23-11-05

FOR INSPECTOR OF PLANS & SURVEYS AUTHORIZED LAND OFFICER DATE

Government of Western Australia — Department of Land Information

APPROVED

APPROVED 24/5/06

INSPECTOR OF PLANS & SURVEYS AUTHORIZED LAND OFFICER DATE

DEPOSITED PLAN

44876

ORIGINAL

SHEET 1 OF 2

EDITION 3 VERSION 1

REGISTER NUMBER	
803/DP44876	
DUPLICATE EDITION	DATE DUPLICATE ISSUED
1	16/6/2006

WESTERN AUSTRALIA

RECORD OF CERTIFICATE OF TITLE

VOLUME 2624 FOLIO 442

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 803 ON DEPOSITED PLAN 44876

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

ANTONIA ANSELMO ALESSANDRINI
ANGELO LUCIANO ALESSANDRINI
JOHN ALESSANDRINI
CATINA ALESSANDRINI
ALL OF LOT 7 HAMMOND ROAD, YANGEBUP
AS TENANTS IN COMMON IN EQUAL SHARES

(AF J756967) REGISTERED 24 MAY 2006

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. G451640 EASEMENT BENEFIT SEE DEPOSITED PLAN 44876 REGISTERED 21.5.1997.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
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Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	DP44876 [SHEET 1].
PREVIOUS TITLE:	2214-750.
PROPERTY STREET ADDRESS:	LOT 803 YANGEBUP RD, COCKBURN CENTRAL.
LOCAL GOVERNMENT AREA:	CITY OF COCKBURN.

FOR HEADING SEE SHEET 1

ENLARGEMENT "A"
NOT TO SCALE

ENLARGEMENT "B"
NOT TO SCALE

ENLARGEMENT "C"
NOT TO SCALE

NOTE 'Z': THE EASEMENT DIMENSIONS AND POSITION ON THIS PLAN IS AN INTERPRETATION, SEE ORIGINAL DOCUMENT.

ENLARGEMENT "D"
NOT TO SCALE

INTERESTS AND NOTIFICATIONS

SUBJECT	PURPOSE	STATUTORY REFERENCE	ORIGIN	LAND BURDENED	BENEFIT TO	COMMENTS
(D)	EASEMENT	SEC 195 of the LAA	DOC H922736	LOTS 801 & 802	WATER CORPORATION	(DP 27222) SEE NOTE 'Z'
(E)	EASEMENT		DOC G451638	LOT 801	SEE DOC.	
(F)	EASEMENT		DOC G451640	SEE DOC	LOT 801 & 803	

JOHN BULLOCK & ASSOCIATES
Consulting Surveyors
12B PEPLER AVENUE
SALTER POINT WA 6152
PHONE (08) 9450 7188 FAX (08) 9450 7199
ABN 98 064 318 829

Our Ref: 5544 44876.CSD

LOT	FORMER TENURE	ON PLAN/DIAGRAM	TITLE
LOT 801	PT LOT 143 PT LOT 144	DP 27927 DP 27063	2214-750 2214-669
LOT 802	PT LOT 144	DP 27063	2214-669
LOT 803	PT LOT 143	DP 27927	2214-750

SCALE: @ A3
ALL DISTANCES ARE IN METRES

NOT TO SCALE

Licensed Surveyor Date

APPROVED BY
WESTERN AUSTRALIAN PLANNING COMMISSION
FILE 807-2-23-190
DELEGATED UNDER S20 WAPC ACT 1985
DATE 22-11-2005

SHEET 2 OF 2
EDITION 3 VERSION 1

Department of Land Information

DEPOSITED PLAN
44876

DP 44876 (02)

REGISTER NUMBER	
4308/DP193038	
DUPLICATE EDITION	DATE DUPLICATE ISSUED
N/A	N/A

WESTERN AUSTRALIA

RECORD OF CERTIFICATE OF TITLE

VOLUME 2151 FOLIO 262

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 4308 ON DEPOSITED PLAN 193038

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

ANTONIA ANSELMO ALESSANDRINI
ANGELO LUCIANO ALESSANDRINI
JOHN ALESSANDRINI
CATINA ALESSANDRINI
ALL OF LOT 7 HAMMOND ROAD, JANDAKOT
AS TENANTS IN COMMON IN EQUAL SHARES

(T H780572) REGISTERED 18 JULY 2001

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
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Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	2151-262 (4308/DP193038).
PREVIOUS TITLE:	LR3108-834.
PROPERTY STREET ADDRESS:	LOT 4308 BEELIAR DR, YANGEBUP.
LOCAL GOVERNMENT AREA:	CITY OF COCKBURN.

NOTE 1: A000001A LAND PARCEL IDENTIFIER OF COCKBURN SOUND LOCATION 4308 (OR THE PART THEREOF) ON SUPERSEDED PAPER CERTIFICATE OF TITLE CHANGED TO LOT 4308 ON DEPOSITED PLAN 193038 ON 15-AUG-02 TO ENABLE ISSUE OF A DIGITAL CERTIFICATE OF TITLE.

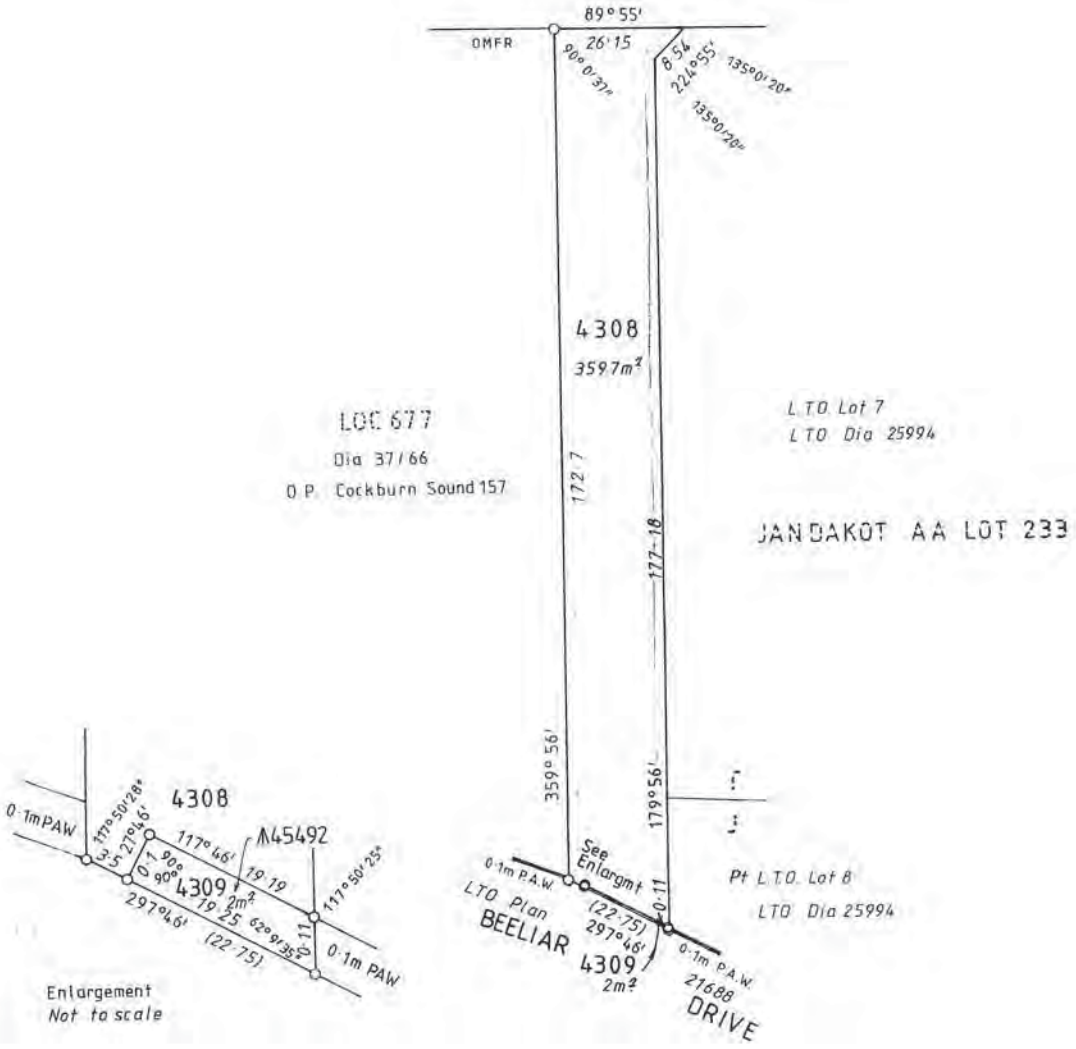
NOTE 2: THE ABOVE NOTE MAY NOT BE SHOWN ON THE SUPERSEDED PAPER CERTIFICATE OF TITLE OR ON THE CURRENT EDITION OF DUPLICATE CERTIFICATE OF TITLE.

Formerly Road

CLOSED ROAD Doc G 934977 Reg 26 Oct 1998

Road No 10791

YANGEBUP ROAD



DP 193038

CD 93038

0 10 20 30 40 50

LAND DISTRICT COCKBURN SOUND	*LOCATIONS 4308 & 4309*	
SURVEYOR'S CERTIFICATE I hereby certify that:- (a) this plan of survey is a correct and accurate representation of the survey carried out by me personally / under my own personal supervision, inspection and field check and recorded in Fieldbooks lodged for the purpose of this plan of survey; (b) the measurements are in strict accordance with the *Licensed Surveyors (Guidance of Surveyors' Regulations 1961* and in particular regulations 23 and 34 of those regulations; and (c) this survey and this plan of survey are in strict accordance with the requirements of the *Licensed Surveyors (Guidance of surveyors' Regulations 1961* and the relevant law in relation to which it is lodged. Licensed Surveyor _____ Date 7.2.1997 (a strike out which ever does not apply)	SCALE 1 : 1000 measurements in metres	FILE 2576 / 993
Prepared by: JOHN GIUDICE AND ASSOCIATES	SURVEYOR DAVID W. BUSSELL	PUBLIC PLAN(S): BG 34 (2) 12·05 12·06
	FIELD BOOK 72164 Page 14 Date of Marking 8·8·96	RECORDED: R.L. Date 30·10·98
In order for certification _____ Date 24·10·98	AZIMUTH FROM O.P. Cockburn Sound 157	SURVEY INDEX PLAN(S): BG 34 (2) 12·05, 12·06 RECORDED: MJ Date 17/2/97
TYPE OF VALIDATION Full Audit: ..... Date ..... Legal Component: [illegible] Date 30.4.97	DIAGRAM CERTIFIED CORRECT _____ Authorized Land Officer Date 26·	LOCAL AUTHORITY: CITY OF COCKBURN LOCALITY: SUCCESS
In order for further action _____ Date 30.4.97		LODGED JAG 17/2/97
		DEPARTMENT OF LAND ADMINISTRATION DIAGRAM 93038

APPENDIX 2

TRANSPORT ASSESSMENT

Proposed LSP

Multiple Lots Cockburn Central & Yangebup LSP, Cockburn

Transport Impact Assessment

PREPARED FOR:
A, C, A & J Alessandrini

September 2018

Document history and status

Author	Revision	Approved by	Date approved	Revision type
Vladimir Baltic	r01	B Bordbar	31/08/2013	Draft
Vladimir Baltic	r01a	B Bordbar	30/10/2015	Final
Vladimir Baltic	r02	B Bordbar	30/11/2016	1st Revision
Vladimir Baltic	r02a	B Bordbar	1/12/2016	2nd Revision
Vladimir Baltic	r02b	B Bordbar	2/12/2016	3rd Revision
Vladimir Baltic	r02c	B Bordbar	2/08/2018	4th Revision
Vladimir Baltic	r02d	B Bordbar	5/09/2018	5th Revision

File name: t09.153.vb.r02d.docx

Author: Vladimir Baltic

Project manager: Behnam Bordbar

Client: A, C, A & J Alessandrini

Project: Multiple Lots Cockburn Central & Yangebup LSP, Cockburn

Document revision: r02d

Project number: t09.153

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1.0 Summary

In October 2015 Transcore prepared a Transport Assessment report (TA version r01a) for the proposed local structure plan to be located at Lots 1, part Lot 802 & Lot 803 Yangebup Road, Lots 7 & 99 Hammond Road, Cockburn Central and Lot 4308 Beeliar Drive, Yangebup (hereafter the LSP). The subject site is located to the northwest of the signalised intersection of Beeliar Drive/Hammond Road and occupies an area bound by Beeliar Drive to the south, Yangebup Road to the north and Hammond Road to the east (refer in **Figure 1**).

In order to address the comments received from City of Cockburn and to provide additional information requested by City an updated version of the TA report was prepared. The subsequent, December 2016 Traffic Impact Assessment report (version r02b), reflected the outcome of traffic modelling for the revised structure plan which included the following modifications and additions:

- Revised access and egress system for the LSP;
- Inclusion of the latest version of land use schedule;
- Inclusion of the traffic impact from the proposed development at the southeast corner of Beeliar Drive/Kemp Road intersection (Lot 98 Beeliar Drive);
- Inclusion of the traffic impact from the potential development at the southwest corner of Beeliar Drive/Kemp Road intersection (Lot 301 Beeliar Drive) using its maximum developable potential;
- Inclusion of the latest SCATS data for the signalised intersection of Beeliar Drive/Hammond Road supplemented by latest manual counts for turning traffic at the intersection;
- Inclusion of the up-to-date counts at all existing site crossovers on Hammond Road including the latest traffic volumes at the Hammond Road/Yangebup Road/Cooper Road intersection; and,
- Capacity assessment of the existing Hammond Road/Yangebup Road/Cooper Road four-way, stop-controlled intersection.

This latest version of the TIA report (r02d), was prepared to address the various comments on previous report received from WAPC and City of Cockburn as well as comments made in the TIA peer review report prepared by Uloth & Associates in March 2017. However, it should be noted that a number of issues raised and comments made in the Uloth's report associated with the design and potential land requirements of the (then) proposed Hammond Road/Kemp Road/Main LSP Access Road roundabout have now become redundant due to recent installation of this roundabout.

The proposed LSP entails a range of land uses which include retail, commercial and medical components. There are existing land uses within the eastern portion of the LSP area including three retail outlets and three residential dwellings. The LSP however intends to remove the existing residential components, retain existing retail

components and develop the remainder of the site to form a retail/commercial/ medical services precinct with internal movement network and on-site parking.

The proposed external access system of the LSP which comprises five access points on abutting roads has been established to provide maximum LSP functionality and to address the City of Cockburn planning and engineering staff comments.

2.0 Introduction

This Transport Impact Assessment has been prepared by Transcore on Behalf of A, C, A & J Alessandrini. The subject of this report is the LSP proposed over Lots 1, part Lot 802 & Lot 803 Yangebup Road, Lots 7 & 99 Hammond Road and Lot 4308 in City of Cockburn (refer **Figure 2** for more details). The subject site (approximately 7.2ha) occupies an area bounded by Beeliar Drive to the south, Hammond Road to the east, Yangebup Road to the north and the existing nature reserve (Beeliar Regional Park) to the immediate east (refer **Figure 1**).

Figure 1: Location of the subject LSP site

The central and western portion of the LSP area are vacant while the eastern portion (Lots 7 & 99) presently hosts three retail outlets ("Tony Ale" fresh produce shop, a seafood shop and an open-air garden products outlet) and three residential dwellings. All but one of the existing land uses (the westernmost residential dwelling) takes access from Hammond Road.

There are presently a total of five crossovers on the western side of Hammond Road section between Beeliar Drive and Yangebup Road of which two are residential crossovers and three commercial crossovers. The sole residential dwelling taking access from Yangebup Road entails a crossover approximately 95m west of Hammond Road (north) intersection.

Lots 98 and 302 Beeliar Drive which are also included in this traffic assessment are also shown in **Figure 1**. Lot 98 was recently developed as a retail/commercial centre while Lot 301 is still vacant.

The LSP site is located within a predominantly retail/commercial/industrial area. Refer **Figure 2** for more details.

Figure 2: Aerial view of the subject LSP area

For the purpose of this assessment and in order to establish existing traffic activity at the subject site Transcore undertook manual traffic counts at all existing Hammond Road crossovers including Hammond Road/Yangebup Road/Cooper Road and Beeliar Drive/Hammond Road intersections during the typical peak morning and afternoon peak hours on Friday 9th September 2016.

3.0 Development Proposal

The proposed LSP area entails Lots 1, part Lot 802 & Lot 803 Yangebup Road, Lots 7 & 99 Hammond Road and Lot 4308 Beeliar Drive.

The location of the LSP area is illustrated in **Figure 3**, which shows it in its regional context within the Metropolitan Region Scheme (MRS).

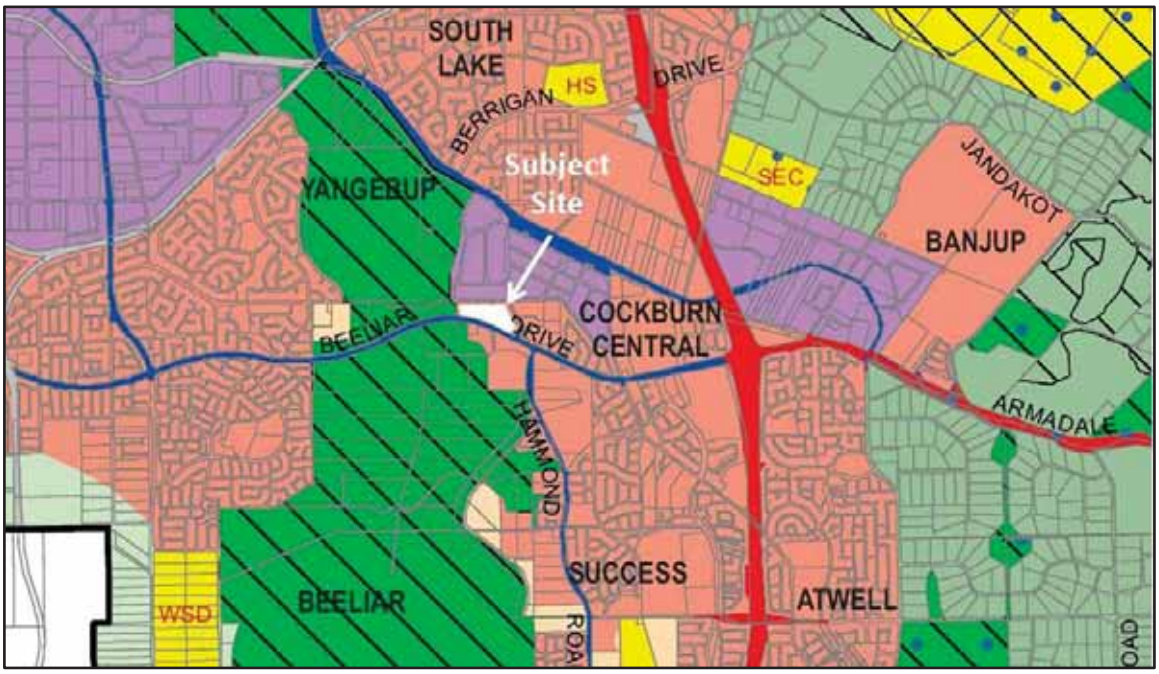

Figure 3: LSP location within Metropolitan Region Scheme

The LSP proposes to retain existing retail components located on Lots 7 & 99 and along Hammond Road and to remove the existing three residential dwellings.

As part of the proposal the existing crossovers on Hammond Road will be rationalised from five to one single left-in/left-out crossover approximately mid-block between Beeliar Drive and Yangebup Road. A total of two full-movement crossovers are proposed to provide access to the structure plan area from Yangebup Road while access from Beeliar Drive is proposed via a left-in/left out crossover at the westernmost end of the site and via recently constructed four-way, dual-lane roundabout at the Beeliar Drive/Kemp Road intersection.

The land uses schedule for the LSP inclusive of existing land uses and proposed new land uses are detailed in **Table 1**. The proposed LSP concept plan is attached in **Appendix A** of this report.

Table 1: Existing and proposed LSP land use schedule

Land Use Type	GFA (m^2)	Status
"Madeley" open air garden & seafood shop	1,420 m^2	Existing
"Tony Ale" fresh produce market	1,400m	Existing
Mixed business complex	13,440 m^2	Proposed
Showrooms	5,830 m^2	Proposed
Retail outlets (off internal N-S road)	2,430 m^2	Proposed
Retail outlets (off Hammond Road)	1,000 m^2	Proposed
Tony Ale's retail outlet (new outlet)	3,300 m^2	Proposed
Offices	730 m^2	Proposed
Medical Centre	2,640 m^2	Proposed

Following a specific request from City of Cockburn the traffic assessment undertaken in this report and documented in Section 7 of this report makes allowance for the recently developed commercial/retail centre at Lot 98 Beeliar Drive at the southeast corner of Beeliar Drive/Kemp Road intersection as well as the future development of Lot 301 Beeliar Drive located at the southwest corner of Beeliar Drive/Kemp Road intersection.

The proposed internal LSP movement network comprises the main north-south spine road bisecting the site, additional east–west internal driveway fronting a row of mixed-use buildings and a system of internal service laneways and car park driveways securing internal permeability throughout the site. The main north-south spine road is proposed to tie in with the recently constructed four-way, dual lane roundabout intersection of Beeliar Drive/Kemp Road at the southern side of the site.

The proposed five-point vehicular access/egress system for the LSP comprises of the following elements:

- **Western Beeliar Drive crossover intersection** (new crossover point on Beeliar Drive) – located at the westernmost end of the LSP area and approximately 300m west of Kemp Road, proposed to operate as a left-in/left-out only crossover intersection;
- **Beeliar Drive/Kemp Road/Main LSP Access Road four-way, dual-lane roundabout intersection** (former Beeliar Drive/Kemp Road T-intersection converted to a roundabout intersection with the new LSP Access Road forming the northern leg of the intersection);
- **Hammond Road crossover** (new left-in/left-out crossover) - located approximately mid-way between Beeliar Drive/Hammond Road and Hammond Road/Yangebup Road/Cooper Road intersections;
- **Eastern Yangebup Road crossover intersection** (new full-movement crossover) – as a new Yangebup Road/Main LSP Access Road intersection proposed to be located approximately 100m west of Hammond Road; and,
- **Western Yangebup Road crossover** (new full-movement crossover) – proposed to be located at the far western end of the road approximately 400m west of Hammond Road.

The proposed LSP access system has been developed to facilitate seamless integration of the LSP plan into the adjacent road network as well as respond to City of Cockburn planning and engineering requests.

Following specific request by City of Cockburn the proposed westernmost LSP access point on Beeliar Drive including the associated access road does not allow for direct connectivity between Beeliar Drive and Yangebup Road thus discouraging any potential rat-run incidents.

The proposed left-in/left-out access on Hammond Road is proposed to entail a left-turn slip lane to ensure minimum impact on the operation of northbound traffic along Hammond Road. It should be noted that the City has expressed its request that in this case a median treatment on Hammond Road be provided in lieu of the optional seagull island treatment to physically reinforce the left-in/left-out operation of the access.

The detailed Hammond Road access design will be developed in the detailed stages of the project.

4.0 Existing Situation

The LSP area is located approximately 19km south-west of the Perth CBD. Existing commercial and retail areas are located immediately east and north of the subject site with the existing nature reserve (Beeliar Regional Park) to the immediate west. The Emmanuel Catholic College camp and Jandakot Primary School are located to the south of Beeliar Drive. Cockburn Gateway City Shopping Centre is located approximately 1.3km east of the site with Cockburn Central Train Station and Kwinana Freeway approximately 1.7km to the east.

4.1 Existing Road Network

Beeliar Drive in the vicinity of the LSP is of dual carriageway and wide median standard and is operating with a sign-posted speed limit of 70km/h. At this location Beeliar Drive entails a 2.5m wide shared footpath along its southern verge. Refer **Figure 4**.

According to the ***Metropolitan Region Scheme (MRS)***, Beeliar Drive is classified as *Other Regional Road (ORR).* In the Main Roads WA *Perth Metropolitan Area – Functional Road Hierarchy* document, Beeliar Drive is classified as a *District Distributor A* road.

Figure 4: Westbound view along Beeliar Drive in the vicinity of LSP

Based on the up-to-date SCATS data sourced from Main Roads WA, this road (west of Hammond Road) is estimated to carry approximately 31,000 vehicles per weekday in September 2016. The weekday morning and afternoon peak hours typically occur between 8:00AM-9:00AM and 4:30PM-5:30PM, respectively. Beeliar

Drive geometry in this vicinity provides good sight lines from both eastern and western approaches to the Hammond Road intersection.

Hammond Road, north of Beeliar Drive, is constructed to an 8m wide single-carriageway, partially kerbed standard with a pedestrian path along its western side. It operates with a speed-limit of 60km/h (refer **Figure 5**).

Figure 5: Northbound view along Hammond Road in the vicinity of subject site

In the Main Roads WA *Perth Metropolitan Area – Functional Road Hierarchy* document, Hammond Road (North and South) is classified as a *District Distributor B* roads.

Based on the September 2016 SCATS data sourced from Main Roads WA, this road (north of Beeliar Drive) carried about 13,000 vehicles during typical weekday. The weekday morning and afternoon peak hours occurred between 8:15AM-9:15AM and 4:30PM-5:30PM, respectively.

Yangebup Road, in the immediate vicinity of LSP site, is of 8m wide single-carriageway standard with no paths on either side of the road. A number of crossovers to commercial tenancies along the northern side of this road are in place (refer **Figure 6**). This road operates under a default built-up area speed-limit regime of 50km/h.

In the Main Roads WA *Perth Metropolitan Area – Functional Road Hierarchy* document, Yangebup Road is classified as an *Access Road*. No traffic data is presently available for this road; however, based on Transcore manual counts at Hammond Road/Yangebup Road/Cooper Road it is estimated that Yangebup Road, west of Hammond Road, presently carries in order of 800vpd.

Figure 6: Westbound view along Yangebup Road in the vicinity of subject site

Hammond Road (section north of Beeliar Drive) has recently been realigned so that former pair of staggered priority-controlled T-intersection with Beeliar Drive has been converted to a signalised four-way intersection. The signalised intersection was constructed in early 2015. On the approaches to Beeliar Drive Hammond Road entails two lanes with a 70-degree left-turn slip lane. Beeliar Drive on the approach to this intersection entails two through lanes with right-turn and left-turn slip lanes. Pedestrian crossings are in place on all four legs of the intersection.

Yangebup Road, Hammond Road North and Cooper Road form a stop-controlled four-way intersection with priority on Hammond Road North. Splitter islands are in place on Yangebup Road and Cooper Road approaches only.

Kemp Road is a 240m long single-carriageway, two-lane road forming a priority-controlled T-intersection with Beeliar Drive at the northern end and terminating with a turn-around facility at the southern end. There are no formal paths on either side of the road. This road provides access to the Emmanuel Catholic College campus located at the southern end of the road. It operates under a default built-up area speed limit of 50km/h.

In the Main Roads WA *Perth Metropolitan Area – Functional Road Hierarchy* document, Kemp Road is classified as an *Access Road*. No traffic data is presently available for this road.

Main Roads WA Intersection *Crash Ranking Report* provides detailed crash data over the 5-year period ending 31 December 2017. The crash data report for the Beeliar Drive/Hammond Road since its completion in early 2015 identifies a total of 64 crashes with 15 causalities. More than 80% off all crashes were rear end crashes

with six being right angle crashes. More details on crash statistics are presented in **Table 2**.

Table 2. Crash history for the Beeliar Drive/Hammond Road intersection

Intersection				Total Crashes	Casualty
Beeliar Drive/Hammond Road				64	15
Rear End	**Right Angle**	**Pedestrian**	**Cycle**	**Wet**	**Night**
52	6	1	N/A	10	10

The same database indicates that there has been a total of eight crashes at the intersection of Beeliar Drive and Kemp Road during the same period. More details on types of crashes are provided in **Table 3**.

Table 3. Crash history for the Beeliar Drive/Kemp Road intersection

Intersection				Total Crashes	Casualty
Beeliar Drive/Kemp Road				8	2
Rear End	**Right Angle**	**Pedestrian**	**Cycle**	**Wet**	**Night**
3	2	0	N/A	0	0

5.0 Changes to External Transport Networks

The development proposal intends to rationalise the existing five crossovers on the western side of Hammond Road to one left-in/left-out crossover, thus minimising the impact on Hammond Road traffic operations. This crossover is proposed to incorporate a left-turn deceleration lane to improve safety and traffic operations. As previously discussed, the City has explicitly requested that a median treatment on Hammond Road be provided in lieu of the optional seagull island treatment to physically reinforce the left-in/left-out operation of the access.

The detailed Hammond Road access design will be developed in the subsequent detailed design stages of the project.

The former priority-controlled T-intersection of Beeliar Drive/Kemp Road was recently converted to a four-way dual-lane roundabout. The future LSP's main north-south spine road is proposed to connect to this roundabout as the northern intersection leg.

Similarly, in order to safety and efficiency of the traffic operation of the existing four-way, stop-controlled intersection of Hammond Road/Yangebup Road/Cooper Road going this intersection is proposed to be upgraded to a four-way, single-lane roundabout. As part of the intersection upgrade process additional land requirements may be necessary in order to design for a suitable size roundabout which would accommodate large vehicles servicing the local industrial area. Hammond Road is classified as RAV Network 4 road and as such is intended to carry vehicles of up to 27.5m in length with up to five axle groups (i.e. prime mover, semi-trailer towing a dog trailer). Hence, the future Hammond Road/Yangebup Road/Cooper Road single-lane roundabout would have to be designed to facilitate appropriate design vehicle performing permitted turns at the roundabout. The appropriate design of the roundabout would determine through further discussions with the City.

As a standard practice, the cost contribution of the proponent towards the upgrade of Hammond Road/Yangebup Road/Cooper Road intersection should be calculated in proportion to estimated traffic impact from the LSP and its contribution to the existing traffic volumes at the intersection. It is considered that the proposed 50% contribution towards intersection upgrade, suggested in Uloth's peer review report, may be a reasonable starting point.

It is however acknowledged that it is City's firm position that cost of the intersection upgrade should be fully borne by the developer.

It is acknowledged that the City holds the view that any of the identified road and intersection upgrades would have to be delivered as part of the first DA stage for the LSP and should be subject of a legal agreement.

As part of the LSP access/egress system a full-movement crossover onto Yangebup Road and a left-in/left-out only crossover on Beeliar Drive at the western site

perimeter are also proposed. The proposed Beeliar Drive crossover is proposed to entail a left-turn deceleration lane to improve traffic operations and safety. The design of the western left-in/left-out only crossover on Beeliar Drive and associated internal LSP access road system is such that it discourages incidents of rat-runs between Beeliar Drive and Yangebup Road at this location.

Yangebup Road is currently presented as a rural-style single-carriageway road. As part of the LSP proposal Yangibup Road, in the vicinity of LSP area, will be upgraded to urban standard with appropriate kerbing, paths and embayed on-street parking to the satisfaction of the City. It is City's view that this upgrade should be fully met by the developer.

A new system of paths surrounding the LSP site will be implemented to interface with the existing path network at this locality and provide direct access to adjacent bus stops in order to improve pedestrian and cyclist connectivity. Additional pedestrian crossing on Beeliar Drive, at the western end of LSP area, is also proposed to supplement the existing crossing at the Kemp Road roundabout.

No other changes to the external road network are proposed as part of the LSP proposal.

6.0 Integration with Surrounding Area

The proposed LSP land uses are consistent with the existing and planned future land uses within the immediate locality consisting primarily of retail and commercial developments.

7.0 Traffic Assessment

7.1 Assessment Period

Due to the nature of the proposal and the constituent land uses the subject LSP and other proposed and assumed developments in this locality are expected to experience distinct peak activity periods during typical weekday afternoon hour and Saturday midday. However, in line with City's request and in order to provide consistency with current City's modelling for the area, the proposed LSP and other developments under consideration were assessed for the morning and afternoon peak weekday periods identified by the City. As such, trip generation is estimated and traffic analysis undertaken for the typical road commuter network weekday morning and afternoon peak hours.

Hence, the peak period assumed for the purpose of this assessment has been established to be 8:00–9:00AM and 4:30-5:30PM during a typical weekday.

7.2 Trip Generation and Distribution

Traffic generation rates for the proposed additional land uses within the LSP area were derived from the industry recognised trip rate sources *"Guide to Traffic Generating Developments, Roads and Traffic Authority of New South Wales" (2002)* and *"Land Use Traffic Generation Guidelines", Director General of Transport South Australia* publications.

The assumed morning and evening (Friday) trip rates applied for the constituent land uses of the LSP area are presented in **Table 4**.

Table 4: Assumed trip generation rates for constituent LSP land uses

Land use	Size	Units	Source	Trip rate per unit		
				Daily	AM	PM
Retail - slow trade (mixed use element)	1,829m^2	GLFA	RTA-NSW	23.8	1.1	1.1
Office (mixed use element)	3,000m^2	GFA	RTA-NSW	10	2.0	2.0
Showroom – fast/slow average (mixed use element)	4,000m^2	GFA	DGT-SA	30	4.0	3.0
Warehouse (mixed use element)	4,000m^2	GFA	RTA-NSW	4.0	0.5	0.5
Medical centre	2,638m^2	GFA	DGT–SA	50	5.0	5.0
Showroom – slow trade	5,832m^2	GFA	RTA-NSW	10	1.0	1.0
Retail - showroom complex	2,430m^2	GFA	DGT-SA	40	4.0	4.0
Retail - supermarket	2,475m^2	GLFA	RTA-NSW	131.1	13.8	13.8
Retail – speciality stores	750m^2	GLFA	RTA-NSW	67.6	5.6	5.6
Office (standalone)	726m^2	GFA	RTA-NSW	10	2.0	2.0

The trip generation and distribution data for the proposed commercial/retail development at Lot 98 was sourced directly from the traffic consultants for this project while the development potential of the Lot 301 was supplied BDG.

According potential development of Lot 301 was assumed to entail approximately 3,000m^2 of showrooms and approximately 5,500m^2 of warehouses.

It should be noted however that since retail types of land uses typically generate minimal trips during early weekday mornings (only employee traffic is experienced), adjustment rate has been applied for such land uses in the attempt to realistically represent the actual traffic activity levels. Hence, minimal traffic activity is anticipated for the retail type of uses in the morning. **Table 5** provides estimation of trips generated by each component of the proposed LSP for daily and AM and PM peak weekday periods.

Table 5: Daily, AM and PM peak hour trip generation for the proposed LSP land uses

Land use	Trip rate per unit		
	Daily	AM	PM
Retail - slow trade (mixed use element)	431	1	20
Office (mixed use element)	300	60	60
Showroom – fast/slow average (mixed use element)	1,200	8	120
Warehouse (mixed use element)	160	2	20
Medical centre	1,319	132	132
Showroom – slow trade	583	3	58
Retail - showroom complex	729	5	73
Retail - supermarket	3,245	18	340
Retail – speciality stores	507	2	42
Office (standalone)	73	15	15
Total	8,547	246	880

Due to the proposed mix of complementing land uses within the proposed LSP, the incidences of multi-purpose trips[1] between the proposed land uses (i.e. cross-trade) are expected. Accordingly, the cross-trade discount was calculated for each individual development component resulting in an overall LSP adjustment in trip generation of approximately 19%.

Accordingly, it is estimated that the proposed land uses within the LSP area would generate approximately **6,940** total weekday trips (both inbound and outbound) with approximately **224** and **715** trips (both inbound and outbound) during typical weekday morning and afternoon road network peak hours, respectively.

Trips associated with the proposed retail and commercial LSP components also comprise passing-trade trips (trips already on the road network and not specifically generated by the proposed development). Arguably, in some instances the passing trade component can be as high as 70% of the total generated traffic depending on the particular type of land use. However, a conservative overall passing trade component of about 23% (sum of individual land use passing trade factors) is assumed for the entire LSP.

[1] *Multi-purpose trips are incidences where more than one shop/outlet are visited within the development (also referred to as "cross-trade")*

Accordingly, it is conservatively estimated that the proposed LSP would generate approximately 5,330 new daily trips with 185 AM peak and 558 PM new peak hour trips (inbound and outbound combined) on the road network. However, it should be noted that traffic generation figures with no passing trade discount have been used for the purpose of the traffic analysis to represent a robust analysis.

It is estimated that the proposed LSP would generate approximately 134 inbound and 90 outbound trips during the weekday AM peak and 337 inbound and 378 outbound trips during the weekday PM peak period.

With respect to the distribution and assignment of the development traffic, consideration was given to the location of the LSP, existing residential zones, existing traffic attractors/generators and the district-level approach/departure routes to and from the site. Accordingly, the assumed directional traffic distribution is as follows:

- 30% of all site-generated traffic to/from Hammond Road north direction;
- 30% of all site-generated traffic to/from Beeliar Drive west direction;
- 30% of all site-generated traffic to/from Beeliar Drive east direction; and,
- 10% of all site-generated traffic to/from Hammond Road south direction.

The traffic currently being generated by existing development at the subject site is already captured in the surrounding road network traffic counts and as such forms part of the “background” traffic.

Transcore undertook traffic surveys at the existing Hammond Road crossovers, Hammond Road/Yangibup Road/Cooper Road intersection and for the turning movements of Beeliar Drive/Hammond Road intersection to establish the level of existing traffic in the identified peak periods. These manual counts were undertaken on 9th September 2016 during the identified peak period hours of 8:00-9:00AM and 4:30-5:30PM. The results of the Friday 9th September 2016 traffic counts are shown in **Figure 7**.

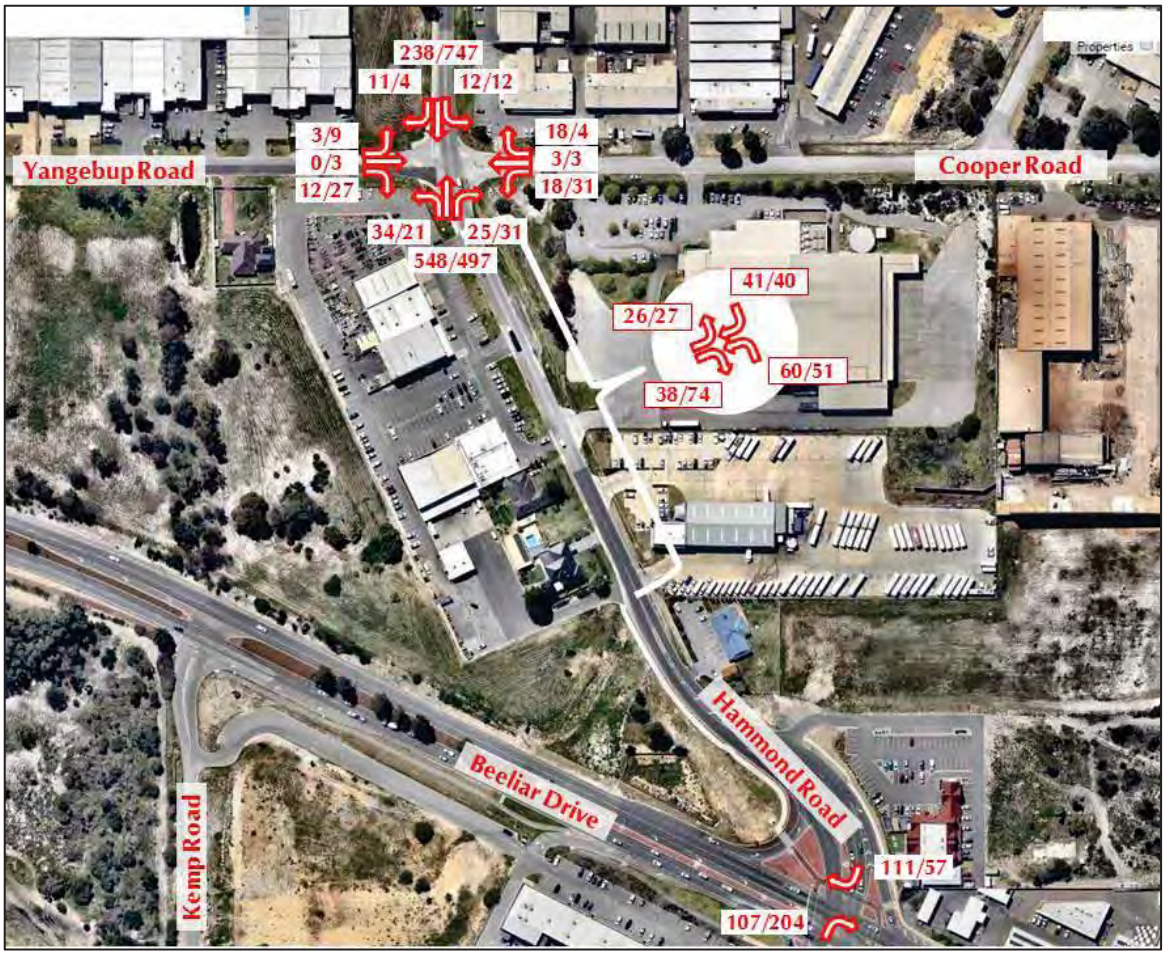

Figure 7: Results of September 2016 traffic survey (AM/PM peak)

7.3 Traffic Flows

Taking into account the subject site location, surrounding road network, proposed access/egress arrangement and the anticipated travel patterns associated with the proposed LSP, the assumed traffic distribution of the LSP new proposed land uses is illustrated in **Figure 8.**

Figure 8: Estimated LSP generated AM/PM peak hour traffic volumes for new proposed land uses

7.4 Analysis of Development Crossovers

The proposed vehicular access/egress system for the LSP comprises four crossovers and one access/egress point at the proposed Beeliar Drive/Kemp Road roundabout intersection.

Considering the directional nature of traffic movements and anticipated relatively low level of traffic activity on Yangebup Road capacity issues are not anticipated at either of the proposed two crossovers on this road. Hence a detailed capacity assessment of these crossovers was not undertaken.

Similarly, as the Hammond Road and westernmost LSP crossover on Beeliar Drive are both proposed to operate as left-in/left-out, a detailed capacity assessment of either of these crossovers was also not undertaken.

However, capacity assessment of the proposed four-way roundabout intersection of Beeliar Drive/Kemp Road/LSP Access Road was undertaken to establish the operational conditions of this intersection in the future.

As well as the LSP traffic, the traffic from the proposed development on Lot 98 and traffic from potential future development of Lot 301 was included in the assessment of the operation of proposed four-way roundabout intersection of Beeliar Drive/Kemp Road/ LSP Access Road.

The assessment of the Beeliar Drive/Kemp Road/LSP Access Road roundabout intersection was undertaken for the full built out scenario and therefore the timeframe for this assessment was taken as year 2026. For this assessment a compound 10 year growth factor of 20% was assumed for Beeliar Drive.

In order to establish the traffic operation of the Beeliar Drive/Kemp Road/LSP Access Road intersection during the critical weekday morning and afternoon peak periods a capacity analysis using SIDRA computer package was undertaken. This package is a commonly used intersection-modelling tool by traffic engineers for all types of intersections. SIDRA outputs are presented in the form of Degree of Saturation, Level of Service, Average Delay and 95% Queue. These items are defined as following:

- **Degree of Saturation**: is the ratio of the arrival traffic flow to the capacity of the approach during the same period. The Degree of Saturation ranges from close to zero for varied traffic flow up to one for saturated flow or capacity.
- **Level of Service**: is the qualitative measure describing operational conditions within a traffic stream and the perception by motorists and/or passengers. In general, there are 6 levels of services, designated from A to F, with Level of Service A representing the best operating condition (i.e. free flow) and Level of Service F the worst (i.e. forced or breakdown flow).
- **Average Delay**: is the average of all travel time delays for vehicles through the intersection.
- **95% Queue**: is the queue length below which 95% of all observed queue lengths fall.

The result of the SIDRA analysis for the morning and afternoon peak hours for year 2026 is detailed in **Figure 9** and **Figure 10**.

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue vehicles veh	95% Back of Queue Distance m	Prop Queued	Effective Stop Rate per veh	Average Speed km/h
South: Kemp Street South											
1	L2	271	2.0	0.729	10.9	LOS B	6.4	45.4	0.92	1.33	36.4
2	T1	1	2.0	0.729	10.9	LOS B	6.4	45.4	0.92	1.33	11.9
3	R2	165	2.0	0.729	10.9	LOS B	6.4	45.4	0.92	1.33	38.2
Approach		437	2.0	0.729	10.9	LOS B	6.4	45.4	0.92	1.33	37.0
East: Beeliar Drive East											
4	L2	118	2.0	0.588	8.5	LOS A	4.3	31.7	0.59	0.67	43.1
5	T1	1007	6.0	0.588	8.9	LOS A	4.3	31.7	0.60	0.68	54.2
6	R2	29	2.0	0.588	14.5	LOS B	4.3	31.3	0.60	0.69	43.0
Approach		1154	5.5	0.588	7.3	LOS A	4.3	31.7	0.60	0.68	53.2
North: Access Road North											
7	L2	41	2.0	0.196	6.6	LOS A	0.9	6.6	0.81	0.81	39.0
8	T1	1	2.0	0.196	6.6	LOS A	0.9	6.6	0.81	0.81	15.8
9	R2	39	2.0	0.196	6.6	LOS A	0.9	6.6	0.81	0.81	41.1
Approach		81	2.0	0.196	6.6	LOS A	0.9	6.6	0.81	0.81	39.8
West: Beeliar Drive West											
10	L2	39	2.0	0.624	7.1	LOS A	6.0	44.4	0.64	0.53	43.1
11	T1	1148	6.0	0.624	5.4	LOS A	6.0	44.4	0.65	0.56	53.6
12	R2	313	2.0	0.624	12.9	LOS B	5.9	42.8	0.66	0.64	41.4
Approach		1500	5.1	0.624	7.0	LOS A	6.0	44.4	0.65	0.58	51.4
All Vehicles		3172	4.7	0.729	7.6	LOS A	6.4	45.4	0.67	0.72	50.1

Figure 9: SIDRA result for proposed Beeliar Drive/Kemp Road/LSP Access Road roundabout during weekday AM peak hour – year 2026

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop Queued	Effective Stop Rate per veh	Average Speed km/h
South: Kemp Street South											
1	L2	251	2.0	0.825	17.8	LOS B	8.6	61.6	0.97	1.68	32.4
2	T1	1	2.0	0.825	17.8	LOS B	8.6	61.6	0.97	1.68	10.2
3	R2	191	2.0	0.825	17.8	LOS B	8.6	61.6	0.97	1.68	33.9
Approach		443	2.0	0.825	17.8	LOS B	8.6	61.6	0.97	1.68	33.0
East: Beeliar Drive East											
4	L2	72	2.0	0.616	9.0	LOS A	4.8	35.2	0.61	0.69	43.1
5	T1	1066	6.0	0.616	7.5	LOS A	4.8	35.2	0.61	0.71	54.0
6	R2	66	2.0	0.616	15.1	LOS B	4.7	34.5	0.62	0.74	42.5
Approach		1204	5.5	0.616	8.0	LOS A	4.8	35.2	0.61	0.71	53.1
North: Access Road North											
7	L2	136	2.0	0.671	14.0	LOS B	4.6	32.7	0.91	1.26	34.3
8	T1	1	2.0	0.671	14.0	LOS B	4.6	32.7	0.91	1.26	12.9
9	R2	138	2.0	0.671	14.0	LOS B	4.6	32.7	0.91	1.26	35.9
Approach		275	2.0	0.671	14.0	LOS B	4.6	32.7	0.91	1.26	35.0
West: Beeliar Drive West											
10	L2	72	2.0	0.639	7.8	LOS A	6.3	45.9	0.71	0.61	42.7
11	T1	1133	6.0	0.639	6.2	LOS A	6.3	45.7	0.72	0.65	53.3
12	R2	234	2.0	0.639	13.9	LOS B	6.3	45.7	0.73	0.71	41.2
Approach		1439	5.1	0.639	7.6	LOS A	6.3	45.9	0.72	0.66	51.4
All Vehicles		3361	4.6	0.825	9.6	LOS A	8.6	61.6	0.73	0.86	48.4

Figure 10: SIDRA result for proposed Beeliar Drive/Kemp Road/LSP Access Road roundabout during weekday PM peak hour – year 2026

The result of the SIDRA capacity analysis of the proposed roundabout intersection for year 2026 indicate that an overall level of service of A can be expected during both peak road network traffic conditions with acceptable delays and queues. The reported maximum queue on Beeliar Drive westbound is about 45m which does not impact on the nearby intersection of Beeliar Drive and Hammond Road.

7.5 Impact on Surrounding Roads

In order to estimate current total daily traffic volumes on roads abutting the LSP area the most up-to-date traffic information and traffic projections were used to estimate daily volumes on various sections of Beeliar Drive and Hammond Road. There are no available traffic counts for the section of Yangebup Road fronting the LSP site; however, based on the September 2016 Transcore survey results it is estimated that Yangebup Road, west of Hammond Road, carries up to 800vpd.

The estimated impact of the proposed LSP (new land use components only) on various sections of the abutting road network is calculated and presented in **Table 6**.

Table 6: Estimated daily LSP traffic impacts on surrounding road network

Road Sections	Total Daily Traffic (vpd)			Impact (%)
	Existing	LSP	Total	
Yangebup Rd (W of Hammond Rd)	800	1,360	2,160	1.7X
Hammond Rd (N of Yangibup Rd)	13,000	1,840	14,840	14%
Hammond Rd (S of Beeliar Dr)	11,200	620	11,820	5.5%
Beeliar Dr (W of LSP)	31,000	1,360	32,360	4.4%
Beeliar Dr (E of Hammond Rd)	27,600	1,360	28,960	4.9%

The WAPC "*Transport Impact Assessment Guidelines Vol 2 – Planning Schemes, Structure Plans and Activity Centres (August 2016)"* provides guidance on the assessment of traffic impacts:

"As a general guide, an increase in traffic of less than 10 percent of capacity would not normally be likely to have a material impact on any particular section of road, but increases over 10 percent may. All sections of road with an increase greater than 10 percent of capacity should therefore be included in the analysis. For ease of assessment, an increase of 100 vehicles per hour for any lane can be considered as equating to around 10 percent of capacity. Therefore any section of road where the structure plan traffic would increase flows by more than 100 vehicles per hour for any lane should be included in the analysis."

Apart from Yangebup Road (west of Hammond Road) and Hammond Road (north of Yangebup Road) the proposed LSP will not result in traffic increases on any of the other road sections adjacent to the LSP site to the threshold levels quoted in *WAPC Guidelines*.

Yangebup Road is currently significantly underutilised considering its classification and standard (Access Road). Based on its classification and standard it is able to

carry daily traffic volumes of about 3,000vpd. Even with the addition of the LSP traffic the post–development daily traffic levels reach 72% of its practical capacity and only along the section between the eastern LSP crossover and Hammond Road intersection. Hence, Yangebup Road has sufficient capacity to accommodate the anticipated traffic from the proposed LSP.

Hammond Road, section north of Yangebup Road, is estimated to carry about 13,000vpd at present. With the addition of LSP traffic this daily traffic volume is expected to increase to just under 15,000vpd. This daily traffic volume still within the upper limit threshold for a *District Distributor B* type of road and is within the physical capacity of a two-lane single carriageway road. According to *Austroads* "*Guide to Traffic Management Part 3: Traffic Studies and Analysis"* document a typical mid-block capacity for urban undivided road with interrupted flow is 900 vehicles per hour per lane. The post-development peak hour traffic is below this threshold.

7.6 Impact on Intersections

In order to establish the operating conditions of the signalised intersection of Beeliar Drive/Hammond Road and the four-way intersection of Hammond Road/Yangebup Road/Cooper Road capacity analysis were undertaken for the two scenarios: existing situation and year 2026.

The existing traffic volumes for the signalised intersection of Beeliar Drive/ Hammond Road were established from the September 2016 SCATS data sourced from Main Roads WA and combined with the Transcore's supplementary manual counts undertaken on 9th September 2016. The year 2026 analysis includes the estimated development-generated traffic with the addition of projected compounded growth of traffic on Beeliar Drive and Hammond Road.

The existing traffic volumes at the Hammond Road/Yangebup Road/Cooper Road intersection were established by Transcore in September 2016.

Accordingly, the result of the SIDRA capacity assessment of Beeliar Drive/ Hammond Road signalised intersection for morning and afternoon peak hours for existing situation is shown in **Figure 11** and **Figure 12**, while the result of the year 2026 are shown in **Figure 13** and **Figure 14.**

The results of the SIDRA capacity analysis of the Beeliar Drive/Hammond Road intersection for the existing situation indicates that this intersection presently operates with an overall LoS C and D in morning and afternoon peak periods, respectively. The most pronounced queues are recorded on the eastern approach to the intersection with queues of approximately 150m during the PM peak hour. The intersection maintains spare capacity during both peak periods.

The result of the intersection capacity analysis for year 2026 indicates that Beeliar Drive/Hammond Road intersection experiences increase in overall delays and queuing; however, the overall LoS in the morning peak remains unchanged at LoS C. The PM peak analysis in the 2026 shows changes in LoS from current D to E with increases in delays and queues as a result of traffic growth. The most pronounced

queue of about 330m is reported on the eastern leg of the intersection; however, the queues on the western approach to the intersection are not expected to exceed 250m. It should be noted however that the significant contributing factor resulting in change of the intersection level of service from LoS D to LoS E is the growth in background regional traffic.

The analysis results suggest that with the full development of the LSP and other developments under consideration with 10-year traffic growth proposed four-way roundabout intersection of Beeliar Drive/Kemp Road/LSP Access Road will not be impacted by the queue backs from the traffic signals and the patrons accessing and egressing the site can do so without impediment. Refer **Figure 13** and **Figure 14** for more details.

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop Queued	Effective Stop Rate per veh	Average Speed km/h
South: Hammond Road South											
1	L2	128	2.0	0.636	22.8	LOS C	6.7	47.6	0.92	0.85	46.8
2	T1	295	2.0	0.636	21.1	LOS C	6.7	47.6	0.94	0.84	43.4
3	R2	107	2.0	0.636	37.4	LOS D	6.4	45.4	0.99	0.93	38.9
Approach		530	2.0	0.636	24.8	LOS C	6.7	47.6	0.94	0.84	43.1
East: Beeliar Drive East											
4	L2	80	6.0	0.062	8.3	LOS A	0.5	3.9	0.30	0.65	55.5
5	T1	732	6.0	0.758	29.0	LOS C	12.6	92.8	0.98	0.90	45.1
6	R2	102	6.0	0.668	43.9	LOS D	3.8	27.7	1.00	0.83	35.9
Approach		914	6.0	0.758	28.8	LOS C	12.6	92.8	0.92	0.87	44.5
North: Hammond Road North											
7	L2	77	7.0	0.078	10.3	LOS B	0.9	6.7	0.46	0.66	51.7
8	T1	83	7.0	0.283	29.2	LOS C	2.6	19.4	0.92	0.71	40.7
9	R2	111	7.0	0.399	35.7	LOS D	3.6	26.6	0.94	0.77	38.0
Approach		271	7.0	0.399	26.5	LOS C	3.6	26.6	0.80	0.72	42.0
West: Beeliar Drive West											
10	L2	207	6.0	0.167	8.5	LOS A	1.6	11.7	0.33	0.67	55.3
11	T1	771	6.0	0.799	30.8	LOS C	13.9	102.0	0.99	0.95	44.1
12	R2	128	6.0	0.838	47.9	LOS D	5.1	37.3	1.00	0.94	34.4
Approach		1106	6.0	0.838	28.6	LOS C	13.9	102.0	0.87	0.90	44.3
All Vehicles		2821	5.3	0.838	27.8	LOS C	13.9	102.0	0.89	0.86	43.9

Figure 11: SIDRA result for signalised Beeliar Drive/Hammond Road intersection during weekday AM peak hour – existing situation

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Hammond Road South											
1	L2	125	2.0	0.170	11.7	LOS B	2.6	18.5	0.50	0.62	52.8
2	T1	40	2.0	0.170	6.1	LOS A	2.6	18.5	0.50	0.62	51.4
3	R2	204	2.0	0.716	47.5	LOS D	9.1	64.9	1.00	0.87	34.3
Approach		369	2.0	0.716	30.9	LOS C	9.1	64.9	0.78	0.76	40.6
East: Beeliar Drive East											
4	L2	137	6.0	0.127	12.7	LOS B	2.2	16.0	0.46	0.69	52.0
5	T1	827	6.0	0.862	43.3	LOS D	20.2	148.8	1.00	1.01	38.3
6	R2	96	6.0	0.693	54.6	LOS D	4.5	33.2	1.00	0.83	32.5
Approach		1060	6.0	0.862	40.4	LOS D	20.2	148.8	0.93	0.95	39.0
North: Hammond Road North											
7	L2	171	7.0	0.182	12.5	LOS B	2.9	21.8	0.49	0.69	50.1
8	T1	576	7.0	0.853	45.6	LOS D	15.5	115.2	1.00	1.01	34.3
9	R2	57	7.0	0.853	51.4	LOS D	15.4	114.2	1.00	1.01	34.1
Approach		804	7.0	0.853	39.0	LOS D	15.5	115.2	0.89	0.94	36.7
West: Beeliar Drive West											
10	L2	174	6.0	0.159	13.3	LOS B	3.1	22.5	0.45	0.68	51.6
11	T1	751	6.0	0.667	30.1	LOS C	14.6	107.6	0.93	0.80	44.5
12	R2	188	6.0	0.864	57.7	LOS E	9.5	69.6	1.00	0.96	31.5
Approach		1113	6.0	0.864	32.1	LOS C	14.6	107.6	0.87	0.81	42.5
All Vehicles		3346	5.8	0.864	38.3	LOS D	20.2	148.8	0.88	0.88	39.7

Figure 12: SIDRA result for signalised Beeliar Drive/Hammond Road intersection during weekday PM peak hour – existing situation

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Hammond Road South											
1	L2	148	2.0	0.758	32.5	LOS C	11.0	78.6	0.97	0.97	41.6
2	T1	359	2.0	0.758	30.5	LOS C	11.0	78.6	0.98	0.95	39.1
3	R2	118	2.0	0.758	44.0	LOS D	9.4	67.2	1.00	0.91	36.5
Approach		625	2.0	0.758	33.5	LOS C	11.0	78.6	0.98	0.95	39.1
East: Beeliar Drive East											
4	L2	88	6.0	0.069	8.7	LOS A	0.7	5.3	0.30	0.65	55.1
5	T1	898	6.0	0.832	35.0	LOS D	18.8	138.1	1.00	0.98	42.0
6	R2	127	6.0	0.815	52.0	LOS D	5.6	41.1	1.00	0.92	33.2
Approach		1113	6.0	0.832	34.9	LOS C	18.8	138.1	0.94	0.95	41.5
North: Hammond Road North											
7	L2	69	7.0	0.074	11.9	LOS B	1.0	7.6	0.48	0.66	50.5
8	T1	94	7.0	0.336	34.1	LOS C	3.4	25.3	0.94	0.73	38.6
9	R2	106	7.0	0.400	40.2	LOS D	3.9	29.0	0.95	0.78	36.3
Approach		269	7.0	0.400	30.8	LOS C	3.9	29.0	0.82	0.73	40.0
West: Beeliar Drive West											
10	L2	203	6.0	0.168	9.6	LOS A	2.2	15.9	0.36	0.67	54.4
11	T1	925	6.0	0.821	33.5	LOS C	18.9	139.4	0.99	0.96	42.7
12	R2	156	6.0	0.876	54.8	LOS D	7.2	52.8	1.00	0.99	32.3
Approach		1284	6.0	0.876	32.3	LOS C	18.9	139.4	0.89	0.92	42.5
All Vehicles		3291	5.3	0.876	33.3	LOS C	18.9	139.4	0.92	0.92	41.3

Figure 13: SIDRA result for signalised Beeliar Drive/Hammond Road intersection during weekday AM peak hour – year 2026

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop Queued	Effective Stop Rate per veh	Average Speed km/h
South: Hammond Road South											
1	L2	153	2.0	0.283	20.6	LOS C	6.3	45.1	0.68	0.70	46.9
2	T1	59	2.0	0.283	15.0	LOS B	6.3	45.1	0.68	0.70	45.8
3	R2	224	2.0	0.936	86.8	LOS F	17.2	122.3	1.00	1.03	25.1
Approach		436	2.0	0.936	53.8	LOS D	17.2	122.3	0.84	0.87	32.4
East: Beeliar Drive East											
4	L2	151	6.0	0.147	16.8	LOS B	3.8	27.9	0.47	0.70	49.2
5	T1	1019	6.0	0.975	85.6	LOS F	45.6	335.7	1.00	1.19	26.6
6	R2	152	6.0	0.853	78.0	LOS E	10.6	78.1	1.00	0.92	26.9
Approach		1322	6.0	0.975	77.0	LOS E	45.6	335.7	0.94	1.11	28.1
North: Hammond Road North											
7	L2	157	7.0	0.182	19.9	LOS B	4.7	35.1	0.55	0.70	45.5
8	T1	679	7.0	0.978	90.6	LOS F	29.7	220.3	0.99	1.22	24.2
9	R2	32	7.0	0.978	96.3	LOS F	29.6	219.9	0.99	1.22	24.2
Approach		868	7.0	0.978	78.0	LOS E	29.7	220.3	0.91	1.13	26.4
West: Beeliar Drive West											
10	L2	170	6.0	0.144	14.4	LOS B	3.9	28.7	0.39	0.66	50.9
11	T1	1012	6.0	0.844	47.9	LOS D	33.3	245.3	0.97	0.94	36.6
12	R2	252	6.0	0.968	97.8	LOS F	20.8	153.0	1.00	1.03	23.4
Approach		1434	6.0	0.968	52.7	LOS D	33.3	245.3	0.91	0.92	34.4
All Vehicles		4060	5.8	0.978	66.1	LOS E	45.6	335.7	0.91	1.02	30.0

Figure 14: SIDRA result for signalised Beeliar Drive/Hammond Road intersection during weekday PM peak hour – year 2026

The results of the SIDRA assessment of the Hammond Road/Yangebup Road/ Cooper Road intersection for the existing situation are presented in **Figure 15** and **Figure 18**.

The SIDRA assessment shows that this intersection operates satisfactorily with minimal impediment to the Hammond Road through traffic flows. Some delays of up to 16sec and 34sec are recorded on the Yangebup Road and Cooper Road however, considering the level of traffic on Hammond Road during peak periods these delays are to be expected.

The addition of LSP traffic and traffic growth result in notable impact on Hammond Road traffic operation and increase delays on both Yangebup Road and Cooper Road (102sec and 73sec respectively) in PM peak period. In order to address this issue, it is recommended that this intersection be upgraded to a single-lane roundabout standard.

Accordingly, a capacity assessment of Hammond Road/Yangebup Road/ Cooper Road intersection for year 2026 scenario assuming a four-way roundabout was undertaken to assess the operation of the upgraded intersection. The results of the AM and PM peak hour assessment are shown in **Figure 17** and **Figure 18**.

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of service	95% Back of Queue Vehicles veh	Distance m	Prop Queued	Effective Stop Rate per veh	Average Speed km/h
South: Hammond Road											
4	L2	34	2.0	0.335	6.4	LOS A	0.3	2.5	0.05	0.06	53.3
5	T1	548	7.0	0.335	0.1	LOS A	0.3	2.5	0.05	0.06	59.2
6	R2	25	2.0	0.335	7.1	LOS A	0.3	2.5	0.05	0.06	52.8
Approach		607	6.5	0.335	0.8	NA	0.3	2.5	0.05	0.06	58.6
East: Cooper Road											
7	L2	18	2.0	0.076	8.5	LOS A	0.3	1.8	0.49	0.92	45.6
8	T1	3	2.0	0.076	14.8	LOS B	0.3	1.8	0.49	0.92	42.7
9	R2	18	2.0	0.076	15.8	LOS C	0.3	1.8	0.49	0.92	45.2
Approach		39	2.0	0.076	12.3	LOS B	0.3	1.8	0.49	0.92	45.2
North: Hammond Road											
10	L2	12	2.0	0.149	8.3	LOS A	0.2	1.8	0.09	0.05	53.1
11	T1	238	7.0	0.149	0.4	LOS A	0.2	1.8	0.09	0.05	58.9
12	R2	11	2.0	0.149	9.4	LOS A	0.2	1.8	0.09	0.05	52.5
Approach		261	6.6	0.149	1.1	NA	0.2	1.8	0.09	0.05	58.3
West: Yangebup Road											
1	L2	3	2.0	0.043	10.4	LOS B	0.1	1.0	0.65	0.98	44.4
2	T1	1	2.0	0.043	14.3	LOS B	0.1	1.0	0.65	0.98	41.7
3	R2	12	2.0	0.043	15.7	LOS C	0.1	1.0	0.65	0.98	44.1
Approach		16	2.0	0.043	14.7	LOS B	0.1	1.0	0.65	0.98	44.0
All Vehicles		923	6.3	0.335	1.6	NA	0.3	2.5	0.09	0.11	57.4

Figure 15: SIDRA result for Hammond Road/Yangebup Road/Cooper Road intersection during weekday AM peak hour – existing situation

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop Queued	Effective Stop Rate per veh	Average Speed km/h
South: Hammond Road											
4	L2	21	2.0	0.297	10.3	LOS B	0.4	2.9	0.08	0.03	53.1
5	T1	497	7.0	0.297	0.4	LOS A	0.4	2.9	0.08	0.03	59.9
6	R2	10	2.0	0.297	13.8	LOS B	0.4	2.9	0.08	0.03	52.5
Approach		528	6.7	0.297	1.1	NA	0.4	2.9	0.08	0.03	58.5
East: Cooper Road											
7	L2	31	2.0	0.105	13.1	LOS B	0.3	2.4	0.73	1.00	43.8
8	T1	3	2.0	0.105	27.1	LOS D	0.3	2.4	0.73	1.00	41.1
9	R2	4	2.0	0.105	31.1	LOS D	0.3	2.4	0.73	1.00	43.4
Approach		38	2.0	0.105	16.1	LOS C	0.3	2.4	0.73	1.00	43.5
North: Hammond Road											
10	L2	4	2.0	0.418	10.0	LOS A	0.4	2.7	0.04	0.01	53.6
11	T1	747	7.0	0.418	0.2	LOS A	0.4	2.7	0.04	0.01	59.6
12	R2	12	2.0	0.418	10.5	LOS B	0.4	2.7	0.04	0.01	53.1
Approach		763	6.9	0.418	0.4	NA	0.4	2.7	0.04	0.01	59.5
West: Yangebup Road											
1	L2	9	2.0	0.226	11.4	LOS B	0.7	5.0	0.84	1.00	38.2
2	T1	3	2.0	0.226	28.4	LOS D	0.7	5.0	0.84	1.00	36.2
3	R2	27	2.0	0.226	33.9	LOS D	0.7	5.0	0.84	1.00	38.0
Approach		39	2.0	0.226	28.3	LOS D	0.7	5.0	0.84	1.00	37.9
All Vehicles		1368	6.5	0.418	1.9	NA	0.7	5.0	0.10	0.08	57.6

Figure 16: SIDRA result for Hammond Road/Yangebup Road/Cooper Road intersection during weekday PM peak hour – existing situation

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Hammond Road											
4	L2	37	2.0	0.593	5.6	LOS A	5.5	40.3	0.43	0.52	49.1
5	T1	671	7.0	0.593	5.8	LOS A	5.5	40.3	0.43	0.52	53.4
6	R2	28	2.0	0.593	9.3	LOS A	5.5	40.3	0.43	0.52	49.8
Approach		736	6.6	0.593	6.0	LOS A	5.5	40.3	0.43	0.52	53.0
East: Cooper Road											
7	L2	20	2.0	0.048	5.8	LOS A	0.3	1.9	0.53	0.61	47.9
8	T1	3	2.0	0.048	5.7	LOS A	0.3	1.9	0.53	0.61	45.7
9	R2	20	2.0	0.048	9.2	LOS A	0.3	1.9	0.53	0.61	48.4
Approach		43	2.0	0.048	7.4	LOS A	0.3	1.9	0.53	0.61	48.0
North: Hammond Road											
10	L2	13	2.0	0.253	4.7	LOS A	1.8	13.4	0.21	0.50	49.4
11	T1	245	7.0	0.253	4.8	LOS A	1.8	13.4	0.21	0.50	53.7
12	R2	84	2.0	0.253	8.3	LOS A	1.8	13.4	0.21	0.50	50.1
Approach		342	5.6	0.253	5.7	LOS A	1.8	13.4	0.21	0.50	52.6
West: Yangebup Road											
1	L2	9	2.0	0.037	9.5	LOS A	0.3	1.9	0.79	0.68	45.5
2	T1	1	2.0	0.037	9.4	LOS A	0.3	1.9	0.79	0.68	43.5
3	R2	13	2.0	0.037	13.0	LOS B	0.3	1.9	0.79	0.68	45.9
Approach		23	2.0	0.037	11.5	LOS B	0.3	1.9	0.79	0.68	45.7
All Vehicles		1144	6.0	0.593	6.0	LOS A	5.5	40.3	0.38	0.52	52.5

Figure 17: SIDRA result for Hammond Road/Yangebup Road/Cooper Road roundabout intersection during weekday AM peak hour – year 2026

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Hammond Road											
4	L2	23	2.0	0.610	6.1	LOS A	5.7	42.4	0.52	0.56	48.9
5	T1	670	7.0	0.610	6.3	LOS A	5.7	42.4	0.52	0.56	53.1
6	R2	11	2.0	0.610	9.7	LOS A	5.7	42.4	0.52	0.56	49.5
Approach		704	6.8	0.610	6.4	LOS A	5.7	42.4	0.52	0.56	52.9
East: Cooper Road											
7	L2	34	2.0	0.100	14.1	LOS B	0.7	4.7	0.89	0.85	43.9
8	T1	3	2.0	0.100	14.0	LOS B	0.7	4.7	0.89	0.85	41.9
9	R2	4	2.0	0.100	17.6	LOS B	0.7	4.7	0.89	0.85	44.2
Approach		41	2.0	0.100	14.5	LOS B	0.7	4.7	0.89	0.85	43.7
North: Hammond Road											
10	L2	13	2.0	0.689	5.0	LOS A	10.4	76.4	0.44	0.46	48.9
11	T1	833	7.0	0.689	5.2	LOS A	10.4	76.4	0.44	0.46	53.2
12	R2	136	2.0	0.689	8.6	LOS A	10.4	76.4	0.44	0.46	49.6
Approach		982	6.2	0.689	5.7	LOS A	10.4	76.4	0.44	0.46	52.6
West: Yangebup Road											
1	L2	45	2.0	0.126	9.4	LOS A	0.9	6.5	0.81	0.75	45.9
2	T1	3	2.0	0.126	9.3	LOS A	0.9	6.5	0.81	0.75	43.8
3	R2	30	2.0	0.126	12.9	LOS B	0.9	6.5	0.81	0.75	46.3
Approach		78	2.0	0.126	10.7	LOS B	0.9	6.5	0.81	0.75	46.0
All Vehicles		1805	6.2	0.689	6.3	LOS A	10.4	76.4	0.50	0.52	52.1

Figure 18: SIDRA result for Hammond Road/Yangebup Road/Cooper Road roundabout intersection during weekday PM peak hour – year 2026

As can be seen from the results of the SIDRA assessment, the proposed roundabout intersection would result in very good operational conditions with ample spare capacity. The overall LoS A is recorded in both AM and PM peak hours with ample spare capacity.

7.7 Impact on Neighbouring Areas

The subject site is relatively isolated from nearby residential areas and as such would have limited impact on the amenity of these areas. The arrival and departure routes to and from the LSP area is mostly from the district-level network and as such would have limited impact outside of these corridors. Part of the traffic associated with the proposed LSP is passing trade which is already present on the road network. This further reduces the traffic footprint of the LSP.

7.8 Traffic Noise and Vibration

Due to the location of the proposed LSP traffic noise and vibration are not relevant issues.

7.9 Road Safety

No particular road safety issues have been identified for the proposed LSP.

8.0 Parking

Total car parking provision for the LSP is 1,022 bays distributed in several parking clusters over the LSP area with the eastern cluster concentrated around the existing retail outlets at the Hammond Road frontage and the western cluster along the Beeliar Drive frontage between the main North-South LSP road and westernmost Beeliar Drive LSP crossovers.

According to the advice provided to Transcore the proposed parking supply conforms to the City of Cockburn planning scheme requirements.

9.0 Public Transport Access

There are several bus services presently operating along Beeliar Drive (bus services 522, 532 and 531) and Hammond Road (bus service 530) with bus stops immediately adjacent to LSP area. The available routes provide connections to Cockburn Central Station and Fremantle Station thus facilitating direct access to Mandurah and Fremantle lines. All list of available bus services along with respective destinations and routes are presented in **Table 7** and **Figure 19**.

Table 7: Bus services routes

Bus service No.	Route
522	Cockburn Central Train Station/Phoenix Shopping Centre
530	Cockburn Central Train Station/Fremantle Train Station
531	Cockburn Central Train Station/Fremantle Train Station
532	Cockburn Central Train Station/ Fremantle Train Station

Figure 19: Local bus service map (source: Transperth)

A pair of No. 530 bus stops is located immediately in front of the LSP area on Hammond Road and approximately 95m south of Yangebup Road with a bus embayment only within the eastern verge of Hammond Road for the southbound direction. Buses are stopping in the northbound lane of Hammond Road for northbound direction.

There is a bus stop within the northern verge of Beeliar Drive adjacent to western LSP perimeter for routes No. 522, 531 and 532 travelling in the eastbound direction while a bus stop for the westbound direction (same services) is located within the southern verge approximately 145m west of Hammond Road intersection. Refer **Figure 20** for more details.

As a result of the proposed LSP and its western crossover intersection the existing Beeliar Drive bus stop in proximity of this crossover would require to be relocated further east.

Figure 20: Local bus stop map

The Perth to Mandurah rail line and the Cockburn Central Train Station are located approximately 1.7km east of the subject site, near the Beeliar Drive/Kwinana Freeway interchange. All identified bus services passing the site provide direct link to this train station.

10.0 Pedestrian and Cyclist Access

The Perth Bike Map series published by the Department of Transport shows local roads around the site entail good road riding environments.

A shared path is in place along the southern side of Beeliar Drive connecting to the Principal Shared Path along Kwinana Freeway east of LSP. There is also a shared path (recreational path) in place along the Yangebup Lake perimeter which is providing connection to the residential areas located west of the Lake.

Extract from the Perth Bike Map series illustrating bicycle facilities at this locality is shown in **Figure 21**.

Figure 21: Existing pedestrian and cycling facilities in the area

As part of the LSP proposal and in order to secure good interface with the existing pedestrian and cyclist network within the immediate locality the following pedestrian and cyclist facilities are recommended:

- Construction of a new pedestrian path within the southern verge of Yangibup Road along the LSP frontage;
- Upgrade of the existing footpath along the western side of Hammond Road fronting LSP to shared path standard; and,

- Construction of a new shared path within the northern verge of Beeliar Drive along the LSP frontage.

Pedestrian/cyclist crossing points would be provided at the proposed Beeliar Drive/Kemp Roads/LSP Access Road roundabout. Similarly, pedestrian/cyclist crossing facilities would be provided at the proposed Hammond Road/Yangebup Road/Cooper Road roundabout.

11.0 Conclusions

This Transport Assessment has been prepared for the Local Structure Plan proposed over Lots 1, part Lot 802 & Lot 803 Yangebup Road, Lots 7 & 99 Hammond Road Cockburn Central and Lot 4308 Beeliar Drive, Yangebup in City of Cockburn. The development proposal intends to retain existing retail components at the eastern side of the subject site and develop the remainder of the LSP area to form retail, commercial and medical centre complex.

The LSP includes five access/egress points from three road frontages. As part of the proposal the existing T-intersection of Beeliar Drive/Kemp Road intersection is proposed to be upgraded to a four-way, dual-lane roundabout. In addition, upgrade of existing Hammond Road/Yangebup Road/Cooper Road four-way, stop-controlled intersection to four-way, single-lane roundabout is proposed. The existing Hammond Road crossovers are rationalised to one left in/left out crossover. Also, a left-in/left-out crossover is proposed on Beeliar Drive at the western permitter of the LSP area. The LSP also includes two full-movement crossovers on Yangebup Road.

It is recommended that the new Hammond Road and western Beeliar Drive left-in/left-out crossovers be supplemented with an appropriately designed left-turn slip lane.

The subject site is presently well served by public transport services but requires upgrade of existing pedestrian and cyclist facilities.

The traffic assessment undertaken in this report also allows for the proposed development on Lot 98 Beeliar Drive at the southeast corner of Beeliar Drive/Kemp Road intersection and the potential development for Lot 301 Beeliar Drive at the southwest corner of Beeliar Drive/Kemp Road intersection. The assessment demonstrates that the surrounding road network including the local signalised intersection of Beeliar Drive/Hammond Road is capable of accommodating the estimated LSP and other traffic subject to traffic management measures recommended in this report.

Appendix A

PROPOSED LSP SITE PLAN (CONCEPT)


CONCEPT SITE PLAN
Lots 1, pt802, 803, Yangebup Road and Lots 7, 99 Hammond Road, Cockburn Central
Lot 4308 Beeliar Drive, Yangebup
CITY OF COCKBURN
HAMMOND ROAD
YANGEBUP ROAD
BEELIAR DRIVE
WHOLESALE (WAREHOUSE)
RETAIL
RETAIL
OFFICE
MEDICAL CENTRE
TONY ALES
MIXED BUSINESS
RETAIL
RETAIL
MIXED BUSINESS
MIXED BUSINESS
LEGEND
Mixed Business
Retail (@100m²)
Landscaping
Footpath
Shared Path

APPENDIX 3

RETAIL SUSTAINABILITY ASSESSMENT

Taktics4
Ales Market
Hammond Road & Beeliar Drive Cockburn

RETAIL SUSTAINABILITY ASSESSMENT

Burgess Design Group
November 2018
9026

Contact

Enquiries regarding this document should be directed to

Greg Davis
M +61 439 959 762
g.davis@taktics4.com.au

Taktics4
45 Ventnor Street
WEST PERTH WA 6005
P +61 8 9429 8813
F + 61 8 9203 6161
www.taktics4.com.au

Project Potential Pty Ltd (ACN 108 512 876) as trustee for DCG Trust (ABN 50 99 523 261 927) trading as Taktics4

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1. INTRODUCTION

1.1 Purpose

This report assesses the retail sustainability of a proposed redevelopment of the land surrounding the Ale Fresh Food market (Ale Market) near the intersection of Hammond Road and Beeliar Drive, Cockburn. It highlights the market demand and economic impacts associated with the proposed increase in retail activity on the site.

The findings in this report forms part of, and informs the Hammond Road North Local Structure Plan (LSP) and should be read in conjunction with the broader LSP findings.

The analysis and findings in this are prepared in accordance with the provisions and guidelines for retail needs and sustainability assessments, as required by Section 6.5 - in State Planning Policy 4.2 – Activity Centre Policy Perth and Peel (WAPC 2010).

This report was initially prepared in June 2016 and has subsequently been updated to reflect additional information provided in accordance with the WAPC recommendations upon approving the LSP.

1.2 Existing Activity

The site currently contains 1,900 sqm retail floor space, incorporating the Ale Fresh Food Market in a single stand alone 1,400sqm building and a fresh food retailer (500sqm) to the north of Ales.

In addition to the retail uses there is an indoor/outdoor furniture and home wares outlet which is not classified as Planning and Land Use Code number 5 – shop (PLUC 5) and is subsequently not included in the analysis.

EXISTING RETAIL AND BULKY GOODS ACTIVITY

Nearmap (2015)

EXISTING RETAIL (PLUC 5) ACTIVITY

Component/Catgeory	floor space (sqm)
Existing Ales Market	1,400
Fish market	500
Total Current Retail (PLUC 5)	**1,900**

Taktics4 (2018)

1.3 Proposed Retail Redevelopment

The LSP proposes an increase in existing shop (PLUC 5) land use from 1,900 sqm to 8,100 sqm, an increase of 6,200sqm. This increase incorporates the development of a new supermarket to accommodate an expanded Ales supermarket from 1,400sqm to 3,300sqm, and the creation of a main street floor space of 2,400sqm (1,200 sqm either side of the main street) with an additional 1,000 sqm retail to be added on Hammond Road.

Land Use Category	Current	Proposed	Difference
Supermarket	1,400	3,300	1,900
Shop/Retail	500	4,800	4,300
Total Shop Retail (PLUC 5)	**1,900**	**8,100**	**6,200**

The proposed increase in retail reflects the amount of floor space necessary to achieve the intended objectives of the LSP. That is, to increase the size of the supermarket from 1,400sqm to 3,300sqm which achieves a size and scale which is reflective of the catchment and the nature of the customer catchment it serves, and so as to place the operator and centre in a better position to maintain a sustainable trading position in light of the ever-changing retail environment.

The proposal is intended to provide the current local long term supermarket operator with an opportunity to expand their premises (currently 1,400 sqm) to 3,300sqm with a view to maintaining a relevant role in the provision of supermarket based goods to its customers in light of expanding competition from the supermarket hierarchy in the form of Coles and Woolworths and Aldi and other planned entrants to the Australian supermarket network.

The introduction of specialty shops (2,400sqm) in a main street retail strip configuration as part of the proposed LSP was designed to create a higher amenity offer for the centre and to offer a range of complementary convenience based retail activity to feed off the supermarket patronage in exactly the same manner as any other supermarket based neighbourhood and/or local centre does across urban Australia. The amount of retail floor space along the main street is considered to be the minimum necessary to afford the street a meaningful street front role and level of amenity.

1.4 Premise

Ales Market has been operating a fresh food market in the Cockburn area since 1964. It has built a reputation as a fresh food provider at low prices and has been a family institution in the area since it was first established. It remains a family owned and run business. As such its customer base is still derived from its strong history of local trading and its unique offer and branding to its loyal customers that have since moved away but still shop at Ales regularly.

Ales Market is a standalone operation and subsequently, does not conform to the current supermarket profiles and has no supporting retail shops. The current size of the supermarket is about half the size of the national retail chains and is finding it difficult to maintain its trading sustainability in the wake of increased competition from similar offers and the expanding nature of Cockburn Central.

As such, the proposed land uses do not attempt to create anything new per se. Each commercial element of the proposal simply builds on existing foundation of adjoining or proximate activity and land uses.

The redevelopment of the site is predicated on the expansion of the existing Ales Fresh Food Market from 1,400sqm to 3,300sqm, an increase of 1,900sqm. This is intended to bring the Ales Market in to line with its competitive environment.

The additional convenience based neighbourhood retail activity is designed to complement the existing market offer by facilitating additional smaller shops, thereby creating a stronger urban amenity to the current retail activity that exists on the site by creating a main street environment.

It will be highlighted in this report that this neighbourhood centre offer is necessary as the Success community have undoubtedly been left with less retail than other communities. The main street concept allows for greater exposure, convenience and legibility for customers and embraces a pedestrian friendly environment, similar to the recent development of Harvest Lakes Neighbourhood centre.

1.5 Non Retail Activity

All other commercial floor space proposed as part of the LSP is not included within the PLUC 5 retail uses. As such these proposed non retail uses do not form part of the analysis or findings within this Retail Sustainability Assessment (RSA).

The proposed office and medical activity is designed to build in the prerequisite diversity to the overall development, given that an isolated pocket of residential development is not likely to be attracted to the area given its adjacency to high volume road traffic and predominantly industrial uses. For this reason residential has not been included in the redevelopment proposal.

Showroom warehouse uses are already established along both sides of Beeliar Drive, and this proposal both acknowledges that recent acceptance by the market and the suitability of the uses as a suitable visual buffer to the industrial precinct behind the redevelopment site.

Finally the mixed business/industrial uses fronting Yangebup Road provides a suitable buffer between the existing uses to the north and also adds additional industrial land uses in an already established industrial area, which is consistent with key objectives of the States Industrial and Employment Lands Policy. Again, these uses form part of the overall LSP but do not required to be, nor constitute part of this RSA.

The retail sustainability assessment is not required or designed to justify the amount of floor space within the mixed business zone. The mixed business zone does not compete with traditional shop front retail and has never required an economic impact assessment to be completed. This is clearly spelt out and dealt with in SPP4.2. The mixed business area ticks all of the criteria associated with the delivery of an ordered and properly planned mixed business precinct.

- It is not in an industrial area.
- It is on a major road
- It is close enough to existing retail centres without encroaching into pedestrian catchments for those centres.

These are the three criteria associated with delivering bulky goods retail to an area. There is no requirement to facilitate an RSA in relation to bulky goods retail. There is already bulky goods and showroom located along both sides of Beeliar Drive. This is considered to be a high exposure, high traffic volume, readily accessible road which forms part of the catchment route into and out of Cockburn Gateway Secondary Centre. This land use is perfectly placed both commercially and from a planning perspective to be located within the LSP.

There are clear guidelines and controls which may be put in place to ensure that the development proceeds in accordance with the proposed LSP. The land use and activity allocation and documentation over the specific uses and the minimum size of floor space for tenants will reduce any risk associated with retail encroaching beyond the proposed amounts in the LSP.

2 POLICY CONTEXT

2.1 SPP4.2 – Activity Centres Perth and Peel

Any planned commercial development that may be seen to depart from policy or expands on the nominated size or nature of a centre requires the following assessments as required by SPP 4.2- Activity Centres Policy Perth and Peel.

The Activity Centres Policy outlines the requirements for the planning and development of new activity centres and the redevelopment and renewal of existing centres. In terms of the activity centres hierarchy, a number of provisions are specified to meet the Policy's objectives:

- *"The responsible authority should not support activity centre structure plans or development proposals that are likely to undermine the established and planned activity centre hierarchy.*
- *Activity centre structure plans and developments should be consistent with the centre's classification in the hierarchy.*
- *The responsible authority should consider the main role/function and typical characteristics for each centre type" as outlined in Table 3.1.*

The Activity Centres Policy states that a Retail Sustainability Assessment is required for a *'major development and scheme amendment or structure plan that provides for a Major Development'* which is defined as "*Development of any building or extension/s to an existing building where the building or extensions are used or proposed to be used for shop-retail purposes and where the shop-retail NLA of the:*

- *proposed building is more than 10,000sq.m; or*
- *extension is more than 5,000sq.m."*

As described in the Activity Centres Policy, "*A Retail Sustainability Assessment (RSA) assesses the potential economic and related effects of a significant retail expansion on the network of activity centres in a locality. It addresses such effects from a local community access or benefits perspective, and is limited to considering potential loss of services, and any associated detriment caused by a proposed development. Competition between existing businesses of itself is not considered a relevant planning consideration.*"

The relevant section 6.5 of the SPP 4.2 is provided Appendix A.

This RSA is provided in recognition that the LSP proposes an additional 6,200sqm of retail floor space to the existing retail centre at Hammond Road.

WAPC SPP 4.2 states that Local Government may require proposed changes to Neighbourhood Centres to be subject to the preparation of a detailed area plan, but it is clear that the jurisdiction for Local and Neighbourhood centres falls outside the purposes, objectives and interests of SPP 4.2. The LSP and this RSA has subsequently been prepared in accordance with the LCACS and will not influence or be impacted by SPP 4.2.

2.2 City of Cockburn – Local Commercial Activity Centres Strategy

The Ale Market components form part of the Jandakot West Industrial Precinct as defined by the City of Cockburn Local Commercial Strategy (Cockburn 2012) (LCACS).

The LCACS allocates Hammond Road North as a local centre, despite the centre function being more in line with a neighbourhood centre role as it is anchored by an existing supermarket. Regardless of the classification as a local or neighbourhood centre, SPP 4.2 policy does not purport to deal with or provide for provision for the spatial planning, expansion or reclassification of either local or neighbourhood centres. It is clearly delineated within SPP4.2 that the provision of Local and Neighbourhood centres should be dealt with

solely by Local Government Activity Centre Strategies. The allocation of additional retail floor space within the LSP would therefore not impact the intended objectives of the SPP 4.2.

The Ales Market clearly does not trade as a Local Centre. Its current mix, size and catchment do not support its position within the LCACS as a Local Centre. The planned business mix proposed within the LSP simply aims to support its current function by introducing a higher level of complementary activity, higher amenity and employment diversity. The centre is currently a supermarket based centre. The additional retail development proposed as part of the LSP will not alter its function as a supermarket based centre.

There has always been an acknowledgement within the City's LCACS that Ales would expand beyond its current size. The City's LCACS identifies that all future retail uses allocated within the mixed business precincts is to be allocated to the Ales Centre.

The LSP falls within the designated Strategic Employment Centres delineated within the LCACS, including:

- Jandakot West Industrial centre (Centre 47)
- North Lake Road (South) Mixed Business Area (Centre 52)
- Beeliar Drive Mixed Business Area (Centre 49)
- Tony Ales Local Centre (Centre 39)

The LCACS outlines a series of clearly described principles and values by which future development in all centres should be assessed against. The LSP satisfies all of the principles including.

Principle 1 - Efficient, Intense and Compact Centres

The LSP aims to create a self perpetuating energy appropriate to the purpose of the supermarket based centre, through development of a contiguous configuration of related activities and urban forms.

Principle 2 – Optimise Frequency, Concentration and Quality of Transactions

The LSP aims to create a more effective, concentrated and higher quality transactions by creating a hub of activity rather than a disparate array of single operations.

Principle 3 – Support Maturation of Centres

The LSP allows the centre to adapt and evolve in order to better meet the changing needs of the growing community.

Principle 4 - Support Integrity of the Activity Centres Network

The LSP is not attempting to change the nature and function of the existing function of the centre. Overall the development of the centre is to the benefit of the City's residents, workers and visitors.

Principle 5 – Optimise the Access to and within Centres

The LSP aims to improve the internal access around the existing centre and connect to the broader access network.

Principle 6 – Match Use with Purpose of Place

The LSP is influenced by the role of its major activity operator - the supermarket. Increasing the size of the supermarket within the growth scenario forecast for the catchment does not alter its purpose of place.

Principle 7 – Place Identity, Amenity and Integrity

The introduction of a main street environment and supporting activity will reinforce the place identity for the centre as well as increasing the amenity dramatically. Without jeopardising the integrity of the network by maintaining its primary function as a supermarket based centre.

Principle 8 – Place Equity

The LSP is designed to allow potential users of the centre to undertake a range of other complementary transactions appropriate for that type of centre.

The LSP adheres to and ticks the boxes associated with each of the basic principles purported as valuable in the LCACS.

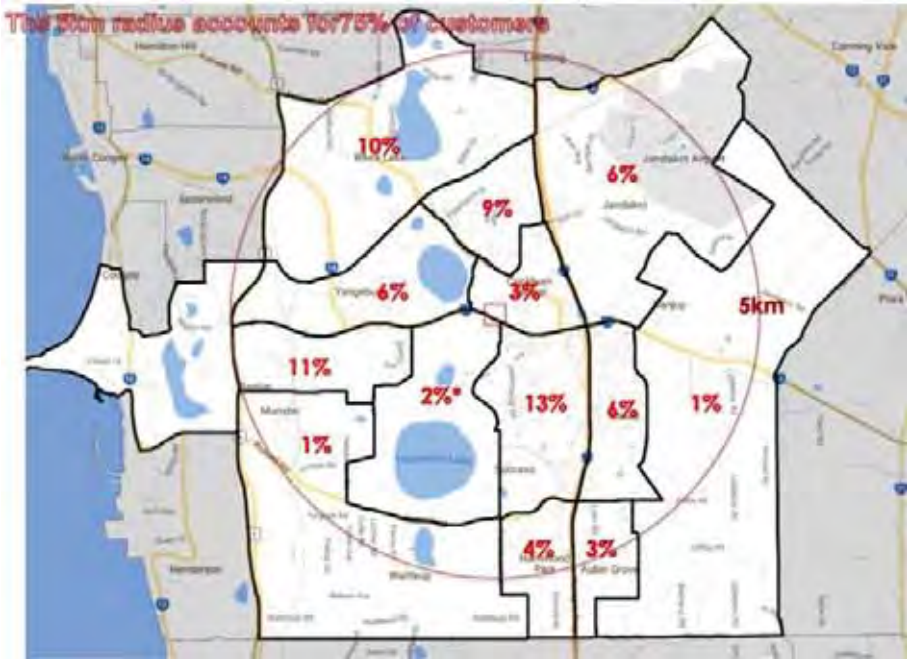
The redevelopment of the site therefore represents the proper and timely planning for the centre and allows it to become a more valuable contributor to the City's activity centre network without attempting to alter its current function and role.

3 MARKET CONTEXT

3.1 Retail Catchment

Ales Market has a catchment base that is more expansive than typical national supermarket chains. Commercial survey findings support this position. The following map shows the estimated sales contribution from each suburb within a 5km radius of the centre. The survey is primarily derived from electronic POS transactions by customers from a single banking institution and extrapolated to include cash and other institution transactions. The data is based on customers to the Ale store only, and was retrieved over a 3 month period from March – May 2016.

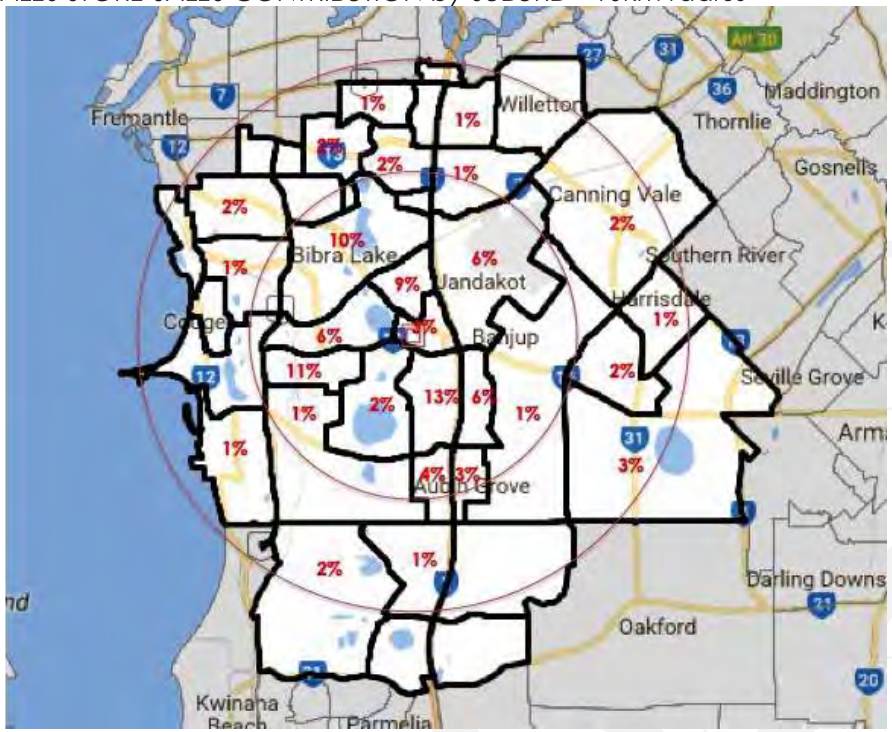
ALES STORE SALES CONTRIBUTION by SUBURB – 5km radius



Source- CommBank (2016)

The findings show that 75% of the Ales store sales are estimated to be derived from suburbs within a 5km radius of the centre. A further 22% of sales are derived from 5-10km radius from the centre, while 3 % of sales are derived from outside this 10km radius. These findings confirm that the catchment for the centre has a trading pattern that is larger than a Local Centre, and that the catchment findings – despite their departure from typical supermarket trading patterns is under the circumstances both realistic and valid.

ALES STORE SALES CONTRIBUTION by SUBURB – 10km radius



Source- CommBank (2016)

A typical corporate full line supermarket (Coles and Woolworths) have a typical catchment size of 1.5km – 2.5km. The catchment for a smaller IGA operated/branded supermarket is typically smaller than this again.

The larger corporate supermarkets in the retail environment clearly have a high market share/capture between them. But they predominantly achieve this by market saturation – with a high market share obtained from a smaller catchment. The likes of Ales, Spud shed and Aldi rely on a lower market capture strategy, obtaining lower market share from a wider catchment to achieve the sales necessary to be sustainable. These stores rely on attracting customers who are prepared to travel further to achieve a product considered missing in closer supermarket offers. The extent and reason for the attraction to these more disparate offers will vary between customers.

Further evidence of this extended catchment is confirmed by the distribution of similar such offers being developed in a network throughout urban Perth. For example the network distribution for 'Spud shed' shows a distribution pattern that promotes a dedicated 10km radius catchment for each store.

What Ales Market lacks is specialty shops to supplement its offer and to capitalise on the strength of Ales catchment. Supermarkets generate the foot traffic that allows smaller retail operators to trade comfortably due to the foot traffic that the supermarket affords them. Supermarkets (and other major tenants) effectively facilitate the sales based on their sheer volume of traffic and sales. This is true in Regional Malls, main streets and neighbourhood centres and is equally true in this instance. It makes logical sense for the major provider of significant customer traffic to complement its role and existence with a range of smaller convenience based shops similar in every way to the role and configuration of a neighbourhood centre anchored by a corporate chain supermarket.

Ales Market has a catchment in excess of a typical corporate supermarket chain. The national supermarket chains trade predominantly to a community of about 1.5km radius. Simply plotting the location of the chains throughout urban Perth (and the rest of Australia) reinforces that most customers do not have to travel further than 1.5km to access goods from the national chains. In reality they may draw customers from beyond these areas for a host of reasons but the underlying fundamental principle is that they don't have to. In fact a typical 1.5km urban residential catchment is capable of supporting both full line supermarkets and typically a third smaller supermarket operator.

The catchment delineation for the LSP is simply a fact of the historic trading position for the operator within the centre. Nothing has changed before or since the allocation of the centre classification in the LCACS.

This RSA analysis acknowledges despite noting the 10km radius catchment that the majority of current and future sales will be derived from within 5km radius. All of the information and data used to assess the future sales potential for the centre utilises the 5km catchment data.

The findings in this RSA therefore supports the position that the Ales store is consistent with other non corporate supermarket offerings similar to the 'Spud Shed' making the correlation between the two as depicted in the RSA both valid and useful.

Notwithstanding this catchment and trading position, the fact remains that customers are attracted by the weekly convenience based shopping, the centre would not be expected to attract fashion or regional based businesses that would normally be targeted or attracted to Secondary Centres such as Cockburn Gateway. Furthermore, the confirmation of the wider catchment reduces the impact of sales on surrounding centres as fewer sales are generated from the surrounding catchment than would be the case for a full line supermarket offer with a smaller catchment.

This analysis shows that the LSP currently represents an anomaly to the LCACS hierarchy. The LSP simply intends to expand to meet forecast growth and in a manner which is consistent with its current function.

SPUD SHED DISTRIBUTION and CATCHMENTS

Taktics4

3.2 Catchment Population

As previously discussed the majority (75%) of retail sales for Ales Market is currently captured by residents within a 5km radius, with a further 22% of sales captured from residents within a 5km and 10km radius. The following tables highlight the existing and forecast population growth within a 5km and 10km radius.

CATCHMENT POPULATION by YEAR

Catchment	*2011*	*2016*	*2021*	*2026*	*2031*
5km radius	69,905	77,065	89,310	101,591	109,352
5km-10km radius	162,905	188,070	208,728	224,503	237,366
Total 10km radius	**232,810**	**265,135**	**298,038**	**326,094**	**346,718**

Population and Household Census (ABS 2011), Armadale, Kwinana, Fremantle, Melville and Cockburn (forecast id consulting 2011-2015)

The total trade area is currently estimated to accommodate nearly 265,000 residents. The population base is estimated to grow to nearly 350,000 by 2031 at an average rate of 5,700 residents per annum. The highest annual growth rates are expected to occur within the 5km radius of the proposed centre. The 5km catchment base is expected to generate nearly 39,500 additional residents from 2011 to 2031.

CATCHMENT POPULATION - GROWTH

Resident Population	***2011-2031***	***Average Population p.a. 2011-2031***	
5km radius	39,447	1,973	5%
5km-10km radius	74,461	3,723	2%
Total 10km radius	**113,908**	**5,695**	2%

Population and Household Census (ABS 2011), Armadale, Kwinana, Fremantle, Melville and Cockburn (forecast id consulting 2011-2015)

Annual growth rates in the broader catchment remain consistent with Perth averages at 2% p.a. which will result in 74,000 residents within the 5km radius suburbs and 237,000 residents between 5km and 10km.

3.3 Catchment Demographics

The catchment is characterised by the following socio-economic demographics:

- A higher proportion of families with children, and fewer single person households, which equates to
    - number of people per household 11% above WA averages
    - younger age group 9% below WA averages
- Predominately Australian born with an ethnicity profile consistent with WA averages.
- More employed people per household and an occupation profile consistent with WA averages, which accounts for
    - personal incomes 5% above WA averages, but
    - average household incomes 16% higher than WA averages reflecting the higher number of employed persons per household
- Higher incidence of mortgages - 5% above WA averages
- fewer rentals and state housing homes consistent with WA averages
- Average mortgages 3% above WA averages
- Average rents 17% higher than WA averages

Overall, these profiles indicate larger and younger families with more people to feed requiring larger supermarket and food and grocery expenditure. The higher household incomes are not eroded unduly by mortgage and other housing costs resulting in higher than normal disposable income. Generally, these profiles are consistent with retail spending about 5% above WA averages.

3.4 Catchment Spending Profiles

The retail spending capacity for the catchment has been estimated using MarketInfo, a micro-simulation model developed by MDS Market Data Systems Pty Ltd. This model is based on information from the ABS' Household Expenditure Survey (HES), the Census of Population and Housing (2006) and other information sources that provide up-to-date information on changes in spending behaviour and/or income levels (e.g. Australian National Accounts, Australian Taxation Statistics, etc.). MarketInfo is used widely by stakeholders in the retail industry.

The model uses micro-simulation techniques to combine propensity to spend on particular commodities with the socio-economic characteristics of individuals to derive spending per capita estimates on a small area basis (i.e. the Census Collector District level).
The retail expenditure estimates throughout the report exclude the component of turnover attributable to goods and services tax, and that all values are expressed in calendar years in constant 2015 dollar terms (i.e. inflation is not included).

The retail spending estimates outlined in this report represent the categories of retail goods and services which are served by retailers within the PLUC 5 definition. A summary of the types of retail expenditure within the PLUC 5 retail definition is provided in Appendix C. Throughout this report PLUC 5 retail expenditure is referred to as retail expenditure or spending.

The community within the catchment is estimated to spend over $14,700 per capita per annum in overall retail spending, including nearly $8,800 p.a. on food and grocery (inclusive of $6,300 in supermarket spending).

AVERAGE SPENDING/EXPENDITURE PER CAPITA 2015

Spending category	Average spend per capita per annum
Supermarket	$6,329
Other food/ grocery	$2,461
Total food/grocery	**$8,790**
Total non food	$5,931
Total retail	**$14,720**

Marketinfo (MDS Market Data Systems Pty Ltd 2014)

3.5 Catchment Spending Capacity

The resident population within the 10km radius is therefore estimated to be producing $3.9B p.a. in total available retail spending. This expenditure base is forecast to increase to $4.8B p.a. by 2026. The 5km community is estimated to be spending $454M p.a. on supermarket expenditure, increasing to $600M p.a. by 2031.

Supermarket based retail spending within the catchment is estimated to increase from $1.5B p.a. in 2016 to $1.9B p.a. by 2026 an overall increase of $400M p.a. The tables highlight the significant growth in retail spending capacity within both catchments. This will minimise any impact of increasing retail floor space within the Ale Market precinct.

2016 RETAIL SPENDING BY CATEGORY ($M p.a. - 2015 dollars)

	Super-market	Balance of Food/ Grocery	**Total Food/ Grocery**	Non Food	**Total Retail**
5km radius	$454	$224	**$677**	$457	**$1,134**
5km-10km radius	$1,107	$546	**$1,653**	$1,115	**$2,768**
Total 10km radius	**$1,561**	**$769**	**$2,330**	**$1,572**	**$3,903**

Marketinfo (MDS Market Data Systems Pty Ltd 2014)

2021 RETAIL SPENDING BY CATEGORY ($M p.a. - 2015 dollars)

	Super-market	Balance of Food/ Grocery	**Total Food/ Grocery**	Non Food	Total Retail
5km radius	$526	$259	**$785**	$530	$1,315
5km-10km radius	$1,229	$606	**$1,835**	$1,238	$3,073
Total 10km radius	**$1,755**	**$865**	**$2,620**	**$1,768**	$4,387

Marketinfo (MDS Market Data Systems Pty Ltd 2014)

2026 RETAIL SPENDING BY CATEGORY ($M p.a. - 2015 dollars)

	Super-market	Balance of Food/ Grocery	**Total Food/ Grocery**	Non Food	**Total Retail**
5km radius	$598	$295	$893	$602	$1,495
5km-10km radius	$1,322	$651	$1,973	$1,331	$3,305
Total 10km radius	**$1,920**	**$946**	**$2,866**	**$1,934**	**$4,800**

Marketinfo (MDS Market Data Systems Pty Ltd 2014)

2031 RETAIL SPENDING BY CATEGORY ($M p.a. - 2015 dollars)

	Super-market	Balance of Food/ Grocery	**Total Food/ Grocery**	Non Food	**Total Retail**
5km radius	$644	$317	$961	$649	$1,610
5km-10km radius	$1,398	$689	$2,086	$1,408	$3,494
Total 10km radius	**$2,042**	**$1,006**	**$3,048**	**$2,056**	**$5,104**

Marketinfo (MDS Market Data Systems Pty Ltd 2014)

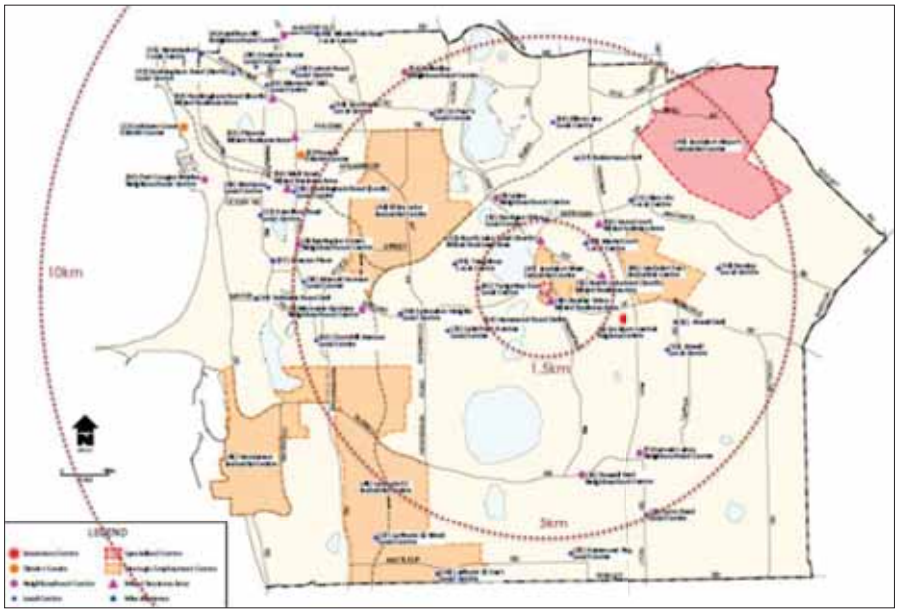
3.6 Existing and Planned Centres

There are currently 22 retail based centres established or planned within the 5km catchment of the centre including:

- Cockburn Central (Secondary Centre)
- 5 x Neighbourhood Centres
- 8 x Local Centres
- 7 x Smaller Centres

The LCACS has modelled the preferred centre composition mix for all centres above local status and arrived at a desired / or optimum floor space allocation to reflect its market demand.

CATCHMENT MAP BY CENTRE LOCATIONS



Local Commercial Strategy (City of Cockburn 2010)

Cockburn Central (Secondary Centre)

Cockburn currently planned to be 72,000sqm by 2016. And eventually increase to 120,000sqm by 2021 and 127,000sqm by 2026. It has initially focused on food and grocery floor space in early stages and will increase the non food offering in subsequent stages. There is currently a development application lodged for expansion to Cockburn Central.

COCKBURN CENTRAL *ACTIVITY MIX*

Cockburn Central	supermarket	balance of food/grocery	**total food/grocery**	non food	**total retail**
2016	10,000	16,000	26,000	46,000	72,000
2021	14,000	20,000	34,000	86,000	120,000
2026	14,000	23,000	37,000	90,000	127,000

Local Commercial Strategy (City of Cockburn 2010)

Neighbourhood and Local Centres

There are five neighbourhood centres located within a 5km radius of Ales Market.

a) Merevale Gardens
b) Russell Road
c) Harvest Lakes
d) Lakes
e) Barrington

There are an additional eight local centres, all of which include a small supermarket of less than 750sqm.

a. Atwell local
b. Lakefront Avenue
c. Banjup
d. Glen Iris
e. Muriel Court

f. Berrigan Drive
g. Spinnaker Heights
h. Yangebup

These centres have an estimated combined 31,850sqm floor space.

None of these centres are allocated additional retail floor space within the LCACS. Therefore the allocation of 31,850sqm in 2016 remains consistent to 2026. All except one is anchored by a major full line supermarket operator.

There are very few centres within the immediate catchment area. In fact there are very few centres in the growth areas directly south of the proposed activity. There are no neighbourhood centres in the main suburbs of Success and Hammond Park. Basically there is no neighbourhood centre (or district centre for that matter) between Beeliar Drive and Russell road and not likely to be one south of Russell road either. This represents a major gap in the distribution of retail activity in this area. Whilst this represents an indictment on historic planning for the region, it is now an opportunity lost as the area has been largely developed and there is no land available for a retrospective delivery of a neighbourhood centre.

There is no District or Neighbourhood centres located within 1.5km of the centre and no District centres located within 5km of the centre. Interestingly there are no District function centres within the 5km catchment despite it being common for District Centres to operate within the trade shadow of a Secondary Centre. This appears to be an aberration by the historic retail planning for the area.

It subsequently appears that Cockburn Central is already operating within an enviable vacuum from retail competition. Even the neighbourhood centres located on the fringe of the catchment are not anchored by full line supermarket chains.

This finding produces immediate evidence that a superior supermarket offer and associated neighbourhood centre retailers will provide the surrounding community with much needed choice in the delivery of convenience based retail goods and services to the local community. especially to the south where there is a specific spatial gap in the retail offer due to the poor interpretation and clarity provided in previous local commercial policies.

The Local Commercial Strategy allocated each neighbourhood and local centre with a range of different retail floor space guidelines. However, Many do not reflect the current provision or allow for the current provision to be reached whilst others have a far greater retail allocation than their assembled land mass is capable of supporting. We have subsequently rationalised the floor space to better reflect the established and the market accepted development scenarios typically suited to these centre types. These centres are now estimated to produce the opportunity of a further 31,850sqm of retail floor space including 18,750sqm in supermarket floor space. It is doubtful that these centres will ever be capable of procuring that amount of supermarket floor space given the disparate nature of the centres and the distribution patterns. This Ale precinct proposal produces a neighbourhood centre option to complement the Cockburn Secondary Centre and the smaller local centres which do not fulfil the needs afforded other communities in the same proximity to Cockburn Central.

Forecast population growth in even the immediate catchment is expected to increase by over 11,000 residents between 2016 (13,400 residents) and 2026 (24,600 residents).

The demand for a full line supermarket is cited to be based on one supermarket for every 8,500 residents. This increase in the immediate catchment alone is sufficient to support another full line supermarket in the catchment let alone an expansion of an existing operator by 1,900 sqm, which is half the size of a full line supermarket.

Analysis of a 5km radius from all existing classified Secondary Centres defined by the SPP4.2 shows that the 5km catchment for a Secondary Centre contains on average five full line supermarkets and eight

smaller supermarkets. A similar analysis of the 5km radius from Cockburn Central reveals just two full line supermarkets and four smaller supermarkets, highlighting a limited supply of supermarket choice in the regions outside the Cockburn Gateway Centre in comparison to other regions served by Secondary Centres. No additional supermarket based centres are currently planned within this location.

PROXIMITY OF SUPERMARKETS WITHIN 5KM OF SECONDARY CENTRES

	Centre Offer				within 5 km radius			
Existing Secondary Centres	**Coles**	**WW**	**Supa IGA**	**IGA**	**Coles**	**WW**	**Supa IGA**	**IGA**
Belmont	1	1	1	0	2	2	1	10
Booragoon	1	1	0	0	2	2	2	7
Victoria Park	1	1	0	1	5	3	3	12
Claremont	1	1	0	1	2	1	1	7
Ellenbrook	1	1	0	0	0	0	0	2
Karrinyup	0	1	0	0	4	1	1	9
Whitfords	1	1	0	0	2	4	1	8
Warwick	1	1	0	0	3	4	2	11
Wanneroo	1	0	1	0	3	4	1	5
Subiaco	1	1	0	0	4	4	2	10
Kwinana	0	1	0	0	2	1	0	2
Clarkson	1	1	0	0	1	0	2	2
Pinjarra	1	0	0	0	0	0	0	0
Leederville	1	0	0	1	5	6	2	10
Mirrabooka	1	1	0	0	4	5	2	12
Maddington	1	1	0	0	3	1	0	6
Average Secondary Centres	**0.9**	**0.8**	**0.1**	**0.2**	**2.6**	**2.4**	**1.3**	**7.1**
Cockburn	**1**	**1**	**0**	**0**	**1**	**1**	**0**	**4**

Coles/Woolworths/IGA store locator web sites

The Coles based Beeliar Village is located 5.5km away from the Secondary Centre and 4 km away from the LSP. Harvest Lakes and Russell Road Centres are both located over 3km south of the Gateway Centre.

The population within a 5km radius of the centre is estimated to grow by 30,000 residents over the next 15 years at a rate of approximately 2,000 residents per annum. The population growth within a 1.5km radius of the centre (suburbs of Cockburn central and Success) is estimated to increase by 14,000 residents over the next 15 years. These forecasts therefore support the demand for an additional full line supermarket within the catchment. The HRN-ACSP only intends to grow the current supermarket floor space by 1,400sqm (40% of a full line supermarket) from 1,900 sqm to 3,300 sqm.

Overall these centres are expected to be providing up to 106,000sqm of this space as of 2016. These same centres combined will be responsible for generating up to 175,000sqm of retail floor space in the designated catchment by 2026. The combination of Neighbourhood and Cockburn Central will cater for up to 36,000sqm of supermarket floor space.

MARKET PROVISION FOR RETAIL FLOOR SPACE

Combined	supermarket	balance of food/grocery	**total food/grocery**	non food	**total retail**
2016	30,150	28,500	58,650	48,000	106,650
2021	36,050	36,870	72,920	95,840	168,760
2026	36,050	39,870	75,920	99,840	175,760

Taktics4

These floor space figures compares favourably to the amount of floor space thought to be sustainable within the catchment based on retail spending capacity within the catchment.

MARKET DEMAND FOR RETAIL FLOORSPACE

Sustainable Retail Floor Space (sqm)	supermarket	balance of food/grocery	**total food/grocery**	non food	**total retail**
2016	56,721	37,269	93,990	91,408	185,398
2021	65,733	43,190	108,924	105,932	214,856
2026	74,772	49,130	123,902	120,499	244,401

Taktics4

The following table shows that even when the floor space from all centres within the catchment are developed there will still be a significant shortfall of retail floor space in the catchment. In fact there will be a market opportunity for an additional 87,000qm. Some of this space may be reflective of spending that is escaping to centres outside the catchment.

DIFFERENCE BETWEEN PROVISION AND DEMAND FOR RETAIL FLOOR SPACE

Balance of Space	supermarket	balance of food/grocery	**total food/grocery**	non food	**total retail**
2016	- 26,571	- 8,769	- 35,340	- 43,408	- 78,748
2021	- 29,683	- 6,320	- 36,004	- 10,092	- 46,096
2026	- 44,435	- 13,013	- 57,447	- 29,864	- 87,311

Taktics4

This analysis shows that the proposed redevelopment of The Ales Market site will not have an undue impact on the provision of floor space in the catchment. In fact it has highlighted that there is a significant gap in the provision of neighbourhood based centres and supermarkets serving the communities of Hammond Park and Success. Subsequently the development of an expanded supermarket and the supplementary shops that provide a day to day convenience based tenants will add choice and options to the community.

4 RETAIL SUSTAINABILITY ASSESSMENT

The retail assessment outlines the nature and extent of the trade area, correlates its socio economic profile to spending behaviour and trade performance, and details the likely influences and impacts of the proposed retail development on surrounding communities and centres.

4.1 Existing Retail Sales

The current retail and bulky goods retail activity is estimated to be generating a total of $28.80M p.a. from the 2,800sqm at an average of $10,300/sqm p.a. However, the overall, nature of this space will be expected to change as a result of the redevelopment proposal.

EXISTING ACTIVITY PERFORMANCE

Component/Category	floor space (sqm)	$/sqm p.a.	Annual Sales
Total Current Retail	1,900	$13,026	$24,750,000
Total Floor space	**2,800**	**$10,286**	**$28,800,000**

Taktics4 (2015)

4.2 Potential Retail Sales

The new Ales Market supermarket has the potential to produce total sales of $40M p.a. from a total increase to 3,300sqm in retail floor space. The additional retail floor space will comprise predominantly convenience based retail reflecting the planned nature of the centre. This additional main street retail has the potential to generate 24.5M p.a. in sales at an average of $5,000/sqm p.a.

The bulky goods retail has the potential to generate nearly $40M p.a. from the new bulky goods and the conversion of the existing Ale Market building to bulky goods retail. The overall centre therefore has the potential to capture $64M p.a. from 8,000sqm at an average sales productivity of $7,800/sqm p.a.

PROPOSED BUSINESS ACTIVITY

Component/Catgeory	floor space	/sqm p.a.	Annual Sales
Future Ales Market	3,300	$12,000	$39,600,000
Convenience based retail	4,870	$5,000	$24,350,000
Proposed Retail Total	**8,170**	**$7,827**	**$63,950,000**

Taktics4 (2015)

The potential retail sales from the expanded retail activity on the site are expected to be derived from the catchments similar to the existing customer and sales patterns for the existing retail offer. Seventy five percent of total sales will be expected to be captured from within the 5km catchment. With a further 25% captured from the resident spending generated from between a 5km and 10km catchment.

SALES CONTRIBUTION (%)

	5km	5-10km	Total
Future Ales Market	75%	25%	100%
Convenience based retail	75%	25%	100%

Taktics4 (2015)

These contributions produce the following sales from each catchment area.

SALES CONTRIBUTION ($M p.a.)

	5km	5-10km	Total
Future Ales Market	$30	$10	$40
Convenience based retail	$18	$6	$24
All	**$48**	**$16**	**$64**

Taktics4 (2015)

The spending capacity by category by catchment is shown in the following tables. It highlights the correlation between the sales contributions from each catchment against the spending capacity.

SPENDING CAPACITY BY CATEGORY

	5km	5-10km	Total
Supermarket	$526	$1,229	$1,755
Balance food/grocery	$259	$606	$865
Total food and grocery	$785	$1,835	$2,620

Taktics4 (2015)

4.3 LSP Productivity

The annual Urbis national averages reports are industry accepted, widely used and reflect an average based on single developer driven neighbourhood supermarket shopping centres. These centres are predominantly based around Coles and Woolworths full line supermarkets in internalised mall environments. The national averages by their very nature therefore highlight that there will be significant variations in sales productivity between the various centres used to determine the database. It is also acknowledged that supermarkets and shops in traditional main street and strip environments invariably result in significantly lower sales productivity levels than their modern internalised counter parts.

The sales productivity used in the RSA analysis represent averages of sales performance captured by main street operators and businesses across neighbourhood centres over ten years across Australia. The nature of the local and neighbourhood centres floor space proposed in and around the catchment is not likely to be developed to single operator standards and performance levels.

The lower sales productivity for assessing future demand is therefore both justified and rational. Notwithstanding this variation, even utilising the Urbis averages ($10,567/sqm p.a.) as a basis for determining the future demand for supermarket floor space within the catchment still shows a shortfall in supermarket floor space of 18,000 sqm within the catchment. The proposed redevelopment in the HRN-ACSP contributes 1,400sqm or 8% of the total increase in demand for supermarket floor space based on the Urbis averages. No other significant supermarket floor space is currently planned within this radius of the centre.

Not with standing that the modelled floor space productivity used falls within the range of sales productivities used to derive the Urbis averages, the productivities used for the HRN-ACSP area slightly above Urbis averages and represent existing store trading.

The planned development will be expected to generate a total sales productivity of $12,000/sqm p.a. from its expanded supermarket operation, slightly above the Urbis averages. However as previously discussed, the sales will be drawn from a wider base and the contribution to sales by residents within the immediate catchment leaves sufficient spending to be captured by existing and future retailers within the designated centres.

4.4 Market Share

The correlation of sales to spending capacity within the various catchments shows that the redeveloped retail activity can expect to capture:

- between 4.5% - 5.5% of food retail spending spending from the 1.5km – 5km resident catchment
- around 1% of the total retail spending from within the 5-10km resident catchment

MARKET SHARE BY CATEGORY

	5km	5-10km	Total
supermarket	5.7%	0.8%	2.3%
balance food/grocery	6.9%	1.0%	2.8%
total food and grocery	6.1%	0.9%	2.4%

Taktics4 (2015)

Analysis of the sales potential and catchment contribution for the proposed activity highlights that the redeveloped retail activity sales will be derived comfortably from within the catchment base allocated to the centre. The next section considers whether the allocated sales are sufficient to create undue influence on the performance of the surrounding retail centres network.

4.5 Spending/Sales Correlation

An increase in supermarket floor space from 1,400 sqm to 3,300sqm (an increase of 1,900 sqm) will not have a negative impact on the surrounding network. We have clearly shown (despite the arguments from the opponents) that supermarket sales will increase from $21.0 M p.a. ($15 M p.a.in 5km radius) to $39.6 M p.a. ($29.7 M p.a. within 5 km radius) as a result of this development (an additional $14.4 M p.a. from within a 5 km radius). The forecast population growth within the 5km radius alone is expected to generate an increase in supermarket spending from $454 M p.a. to $526 M p.a. (an increase of $72 M p.a.in supermarket spending) alone.

This clearly shows that the proposed supermarket expansion will capture just over 5% of the total spending capacity available within the 5km catchment.

Land Use Category	Current (2016)	Proposed (2021)	Difference
Supermarket floor space (sqm)	1,400 sqm	3,300 sqm	+1,900 sqm
Proposed Supermarket Sales	$21.0 M p.a.	$39.6 M p.a.	$18.6 M p.a.
Proposed supermarket sales from within 5km radius	$15.3 M p.a.	$29.7 M p.a.	$14.4 M p.a.
Catchment supermarket spending within 5 km radius	$454 M p.a.	$526 M p.a.	$72 M p.a.
Total supermarket Sales as % of total Catchment Supermarket Spending	**3.4%**	**5.6%**	**20.0%**

There is a significant amount of additional retail spending to be generated into the catchment. The additional retail floor space proposed in the SP will capture a small amount of that, but the majority will still be available for existing centres/supermarkets. There can be no detrimental impact created by the expansion of an existing supermarket already operating in the catchment given the growth in population and spending that is still occurring in the catchment.
The retail sustainability assessment is designed to assess whether any proposed retail activity will have an undue impact on the performance and efficiency of the surrounding commercial network.

The growth in population alone will result in supermarket spending by residents within the 1.5km catchment to increase by an additional $77 M p.a.

The retail modelling indicates that the expanded supermarket would capture an additional of $15M p.a. Based on current market capture less than $3.75M p.a. (25%) would be derived from the 1.5km radius catchment. This represents 5% of the total forecast *increase* in supermarket based spending per annum forecast for the 1.5km radius. Leaving 95% ($73M p.a.) of forecast supermarket spending within the 1.5 km radius to be captured by existing supermarket operators.

Under any analysis the relatively modest increase in supermarket floor space will not represent a significant economic impact on surrounding commercial trading positions.

4.6 Supermarket Demand

Previous sections have highlighted the overall retail spending capacity within the overall catchment. A quick recap reaffirms that the total retail spending capacity in the catchment amounts to $1.13B p.a. in 2016 and that figure is estimated to increase to $1.6B p.a. by 2031 largely on the back of population growth planned for the catchment. Retail sales productivity figures represent the sales

required by unit measure to reflect a sustainable sales figure for a tenant or retail category.

These figures show that a supermarket requires on average $8,000/sqm p.a to achieve sufficient sales to sustain its trading position. The overall sales productivity across all retail categories is $6,000/sqm p.a.

The correlation of these industry acknowledged unit measures suggests that the catchment is currently considered capable of sustaining up to 185,000sqm of total retail floor space within the catchment and that this amount can expect to increase in conjunction with population growth and spending growth to sustain 244,000sqm in 2026 and 263,000sqm in 2031.

This allows for the leakage of expenditure to other centres and precincts as well as the potential influx of retail spending from outside the catchment.

	5km catchment				
Retail Spending by category ($M p.a.)	supermarket	balance of food/grocery	**total food/grocery**	non food	**total retail**
2016	$454	$224	$677	$457	$1,134
2021	$526	$259	$785	$530	$1,315
2026	$598	$295	$893	$602	$1,495
2031	$644	$317	$961	$649	$1,610
	supermarket	balance of fo	**total food/gro**	non food	**total retail**
floor space productivity ($/sqm p.a.)	$8,000	$6,000	$7,207	$5,000	$6,119

The sustainable floor space comprises an increase in supermarket based floor space from 56,000sqm in 2016 to 75,000sqm in 2026 and 80,000sqm in 2031.

	5km catchment				
Sustainable Retail Floor Space (sqm)	supermarket	balance of food/grocery	**total food/grocery**	non food	**total retail**
2016	56,721	37,269	93,990	91,408	185,398
2021	65,733	43,190	108,924	105,932	214,856
2026	74,772	49,130	123,902	120,499	244,401
2031	80,485	52,883	133,367	129,704	263,071
change 2016-2031	**23,764**	**15,614**	**39,378**	**38,296**	**77,674**
	31%	20%	51%	49%	100%

The next step is to compare that sustainable market demand to the planned market provision of centres in the catchment and see if the provision is consistent with market demand.

The retail modelling does not attempt to justify the amount provided as suggested by the notes. It clarifies that the subsequent impact on this additional retail floor space will not have a detrimental impact on the current hierarchy of centres and will not duplicate or undermine the infrastructure and facilities provided in surrounding centres. Anything less than this amount would be considered to render the main street a token gesture with limited subsequent amenity to the centre.

4.7 Employment

The proposed redevelopment is expected to be responsible for delivering an additional 562 employees into the Jandakot west industrial precinct. Industrial floor space remains the main driver of floor space and employment base within the broader Jandakot West Industrial Precinct. It currently represents 96% of the total floor space allocation. Under the proposed redevelopment the reliance on industrial reduces to 77% of total floor space. However the diversity is skewed by the large industrial base in the precinct.

EXISTING EMPLOYMENT PROFILE – JANDAKOT INDUSTRIAL PRECINCT

2016	**Floor space**	**Employment**	**Distribution**
industrial	260,000	1,926	96%
shop	1,900	76	4%
bulky goods	900	11	1%
office	-	-	0%
Total	**262,800**	**2,013**	**100%**

Taktics4

POTENTIAL EMPLOYMENT PROFILE – JANDAKOT INDUSTRIAL PRECINCT

2026	**floor space**	**employment**	**distribution**
industrial	267,800	1,984	77%
shop	8,170	327	13%
bulky goods	9,940	124	5%
office	3,500	140	5%
Total	**289,410**	**2,575**	**100%**
change between 2016-2026	**26,610**	**562**	**n/a**

Taktics4

When we remove the existing Jandakot West Industrial Precinct and focus solely on the redevelopment area. The diversity shift is more pronounced. The current reliance is on shop floor space with 87% while bulky goods represent 13% of space. The proposed redevelopment reduces the reliance on shop to only 50%. Bulky goods increases to 19%, office to 23% and the additional industrial space to the north of the site represents 9$% of the redevelopment area floor space.

EXISTING EMPLOYMENT PROFILE – ALE MARKET REDEVELOPMENT ONLY

2016	**floor space**	**employment**	**distribution**
industrial		-	0%
shop	1,900	76	87%
bulky goods	900	11	13%
office	-	-	0%
Total	**2,800**	**87**	100%

Taktics4

POTENTIAL EMPLOYMENT PROFILE – ALE MARKET REDEVELOPMENT ONLY

2026	**Floor space**	**Employment**	**Distribution**
industrial	7,800	58	9%
shop	8,170	327	50%
bulky goods	9,940	124	19%
office	3,500	140	22%
Total	**29,410**	**649**	**100%**
change between 2016-2026	**26,610**	**562**	**n/a**

Taktics4

5 SUMMARY

The analysis and findings from this RSA prove that the proposed increase in retail floor space as part of the proposed Ale Market LSP makes logical planning sense. The planned market growth in the catchment supports the introduction of additional retail floor space.

The development does not represent an over development for the site or the proposed land use types and builds on the existing land uses and synergies that already exist on the site. The development will create over 500 new and diverse job opportunities for local residents.

The significant residential growth still planned for the catchment means that there are still significant opportunities for sales growth by existing retailers and that the proposed redevelopment will have no impact on the future delivery and performance of the Cockburn Centre.

There are very few neighbourhood centres available in the catchment – especially in the Hammond Park and Success. The proposed increase in supermarket floor space will therefore play a very important role for the local community by providing a complementary convenience based centre and offer that is not currently available to them.

The proposed LSP simply aims to create a more appropriate surrounding environment to reflect the existing function of the precinct. The growth in supermarket floor space is only 1,400sqm and is expected to capture an additional $15M p.a. in sales of which $3.75M p.a. is expected to be captured from within a 1.5km radius. This represents just 4% of the total increase in supermarket spending forecast through population growth within the 1.5km catchment. This growth will also provide surrounding supermarkets with an increase in sales opportunities due to the current and forecast lack of adequate supermarket supply, the larger trading draw of the existing centre, the forecast increase in demand for supermarket space.

5.1 Floor space Allocation/provision

The LSP is intended to increase the size of the existing supermarket and add some supporting shops, which is consistent with the current role of the centre.

There is already 1,900 sqm of shop floor space on the site including a 1,400sqm supermarket, the proposed LSP proposes an increase in supermarket floor space from 1,400 sqm to 3,300 sqm, an increase of just 1,900sqm in supermarket space. The remaining floor space is partly provided to accommodate City of Cockburn's desire for a main street to improve the amenity of the precinct. The minimum amount required to facilitate the main street is 1,200sqm on either side of the street – this provides for 8 shop fronts either side of the road
To this end the LSP does not advocate a change in the role of the centre. The centre is currently a supermarket based centre and we are proposing an increase in supermarket floor space of just 1,900sqm
The main street retail floor space adds 16 shops to the mix in order to improve the amenity and functionality of the centre.

Impact/Demand

The amount of shop floor space was essentially based around a desire to bring the centre up to a role consistent with other supermarket based centres of this ilk throughout the metropolitan area. A supermarket based centre typically comprises 3,300sqm of supermarket and 10-20 speciality stores. This is all the LSP is aiming to do from a shop perspective. The demand for this centre type located this distance from existing centres was proven to fill a gap rather than take from existing centres. The additional sales associated with a 1,900sqm increase in supermarket and 16 shops do not place undue impact on existing spending capacity within the catchment.
The additional retail floor space proposed simply supports the provision of an existing local retailer to provide a more appropriate mix and amenity in and around its existing store. Put simply the introduction of smaller retail tenancies does little to influence the performance or role of a particular centre. The major tenant is

responsible for driving the function, nature and role of the centre. In this instance the existing supermarket operator will continue to be the driver of foot traffic to the centre, regardless of the retail tenancies developed in support of the main street environment the applicant is trying to achieve.

6 APPENDIX

Appendix A - SPP 4.2 – Activity Centre Perth and Peel RSA (Section 6.5)

6.5 Retail Sustainability Assessments

A Retail Sustainability Assessment (RSA) assesses the potential economic and related effects of a significant retail expansion on the network of activity centres in a locality. It addresses such effects from a local community access or benefits perspective, and is limited to considering potential loss of services, and any associated detriment caused by a proposed development. Competition between businesses of itself is not considered a relevant planning consideration.

6.5.1 Scope and requirements

(1) The RSA shall assess potential effects of the sustainable future provision of shopping by existing and planned activity centres in the locality, taking into account:

• the supportable shop-retail floor space for an appropriate service population, based on the normative primary service (trade) areas in ***Table 3****;*
• the Commission's Guidelines for Retail Sustainability Assessments; and
• an assessment of the costs imposed on public authorities by the proposed development, including the implications for and optimal use of public infrastructure and services provided or planned in the locality.

(2) The RSA should consider overall costs and benefits of the proposal taking into account the objectives of this policy and the Commission's Guidelines for Retail Sustainability Assessments.

Findings should be expressed in terms of any potential impacts on each affected activity centre.

(3) The methodology, assumptions and data used in such analysis must be specified and be appropriate, transparent and verifiable.

6.5.2 When required and exemptions

(1) Major developments and scheme amendments or structure plans that provide for major development are to include a RSA. Furthermore, any proposal that would result in the total shop retail floor space of a neighbourhood centre exceeding 6000 m2 nla, or expanding by more than 3000 m2 shop-retail nla also requires a RSA.

(2) The responsible authority may waive this requirement where the proposed shop-retail floor space is substantially within the walkable catchment of a passenger rail station, in view of the scale and likely impact of the proposal.

(3) Where an endorsed local planning (commercial) strategy, district, local or activity centre structure plan includes an indicative amount of shop-retail floor space derived from a retail needs assessment, a RSA is only required where a significant increase to this shop-retail floor space is proposed.

(4) Major developments and scheme amendments or structure plans that provide for major development in the Perth Capital City or strategic metropolitan centres do not require a RSA.

Appendix B - Population Forecast By Suburb By Catchment

Resident Population	2011	2016	2021	2026	2031	2011-2031	average population p.a.	
1.5km radius	9,203	13,380	19,919	24,585	27,638	18,435	922	10%
1.5km - 5km radius	60,702	63,685	69,391	77,006	81,714	21,012	1,051	2%
5km-10km radius	162,905	188,070	208,728	224,503	237,366	74,461	3,723	2%
Total 10km radius	**232,810**	**265,135**	**298,038**	**326,094**	**346,718**	**113,908**	**5,695**	2%
Resident Population								
1.5km radius	**2011**	**2016**	**2021**	**2026**	**2031**	**2011-2031**	**average population p.a.**	
Cockburn Central	693	2,618	5,562	9,019	12,152	11,459	573	83%
Success	8,510	10,762	14,357	15,566	15,486	6,976	349	4%
Total 1.5km radius	**9,203**	**13,380**	**19,919**	**24,585**	**27,638**	18,435	922	10%
1.5km - 5km radius	**2011**	**2016**	**2021**	**2026**	**2031**	**2011-2031**	**average population p.a.**	
Atwell	8,648	9,369	9,180	8,899	8,748	100	5	0%
Aubin Grove	4,153	7,616	9,144	13,094	16,314	12,161	608	15%
Banjup	1,401	1,401	1,401	1,401	1,401	-	-	0%
Beeliar	5,870	7,622	8,713	9,375	9,404	3,534	177	3%
Bibra Lake	5,955	6,174	6,140	6,150	6,278	323	16	0%
Hammond Park	2,436	5,282	8,003	11,134	12,572	10,136	507	21%
Jandakot	2,738	2,832	2,803	2,751	2,736	- 2	- 0	0%
Leeming	11,092	2,283	2,242	2,261	2,299	- 8,793	- 440	-4%
Munster	3,476	5,074	5,641	5,868	5,844	2,368	118	3%
North Lake	1,262	1,307	1,284	1,299	1,327	65	3	0%
South Lake	5,973	5,973	5,973	5,973	5,973	-	-	0%
Wattleup	572	572	572	572	572	-	-	0%
Yangebup	7,126	8,180	8,295	8,229	8,246	1,120	56	1%
Total 1.5km - 5km radius	**60,702**	**63,685**	**69,391**	**77,006**	**81,714**	**21,012**	**1,051**	2%
5-10km radius	**2011**	**2016**	**2021**	**2026**	**2031**	**2011-2031**	**average population p.a.**	
Anketell	257	257	257	257	257	-	-	0%
Bateman	3,740	4,146	4,180	4,349	4,546	806	40	1%
Beaconsfield (WA)	4,651	4,651	4,651	4,651	4,651	-	-	0%
Booragoon	5,463	5,693	5,805	5,925	6,108	645	32	1%
Brentwood (WA)	1,916	1,916	1,916	1,916	1,916	-	-	0%
Bull Creek (WA)	7,543	8,587	8,487	8,469	8,521	978	49	1%
Canning Vale	30,663	30,663	30,663	30,663	30,663	-	-	0%
Coogee (WA)	4,142	7,679	13,209	18,423	22,824	18,682	934	23%
Coolbellup	4,917	5,828	6,907	7,138	7,465	2,548	127	3%
Forrestdale	1,062	1,192	1,253	1,301	1,670	608	30	3%
Hamilton Hill	9,857	10,873	12,230	13,898	15,610	5,753	288	3%
Harrisdale	3,805	6,552	9,034	11,339	12,049	8,244	412	11%
Henderson	14	14	14	14	14	-	-	0%
Hilton (WA)	3,576	3,576	3,576	3,576	3,576	-	-	0%
Hope Valley (WA)	107	107	107	107	107	-	-	0%
Kardinya	8,795	9,349	9,436	9,590	9,831	1,036	52	1%
Mandogalup	61	2,000	3,000	4,000	5,000	4,939	247	405%
Melville (WA)	5,197	5,538	5,677	5,816	5,992	795	40	1%
Mount Pleasant (WA)	6,498	7,644	8,218	8,552	8,841	2,343	117	2%
Murdoch	3,324	4,797	5,592	6,141	6,450	3,126	156	5%
Myaree	1,895	1,895	1,895	1,895	1,895	-	-	0%
Naval Base	11	11	11	11	11	-	-	0%
North Coogee	577	577	577	577	577	-	-	0%
O'Connor (WA)	318	318	318	318	318	-	-	0%
Oakford	2,408	2,408	2,408	2,408	2,408	-	-	0%
Piara Waters	2,595	8,268	13,066	15,338	16,706	14,111	706	27%
Rossmoyne	3,356	3,356	3,356	3,356	3,356	-	-	0%
Samson	1,907	1,907	1,907	1,907	1,907	-	-	0%
Southern River	5,984	5,984	5,984	5,984	5,984	-	-	0%
Spearwood	9,096	10,711	12,360	12,887	13,352	4,256	213	2%
The Spectacles	-	-	-	-	-	-	-	#DIV/0!
Wandi	808	3,000	4,000	5,000	6,000	5,192	260	32%
Willagee	4,766	4,977	5,038	5,101	5,165	399	20	0%
Willetton	17,393	17,393	17,393	17,393	17,393	-	-	0%
Winthrop	6,203	6,203	6,203	6,203	6,203	-	-	0%
Total 5-10km	**162,905**	**188,070**	**208,728**	**224,503**	**237,366**	74,461	3,723	2%
10km radius	**232,810**	**265,135**	**298,038**	**326,094**	**346,718**	**113,908**	**5,695**	2%
Population and Household Census (ABS 2011)								
Armadale, Kwinana, Fremantle, Melville and Cockburn (forecast id consulting 2011-2015)								

Appendix C – Centre Types

		Super-market	balance of food/ grocery	**total food/ grocery**
NC	Merevale Gardens	3,000	1,500	4,500
	Russell Road	750	-	750
	Harvest Lakes	3,000	1,500	4,500
	Lakes	3,000	1,500	4,500
	Barrington	3,000	1,500	4,500
	Total Neighbourhood	**12,750**	**6,000**	**18,750**
LC	Atwell local	750	500	1,250
	Lakefront Avenue	750	500	1,250
	Banjup	750	500	1,250
	Glen Iris	750	500	1,250
	Muriel Court	750	500	1,250
	Berrigan Drive	750	500	1,250
	Spinnaker Heights	750	250	1,000
	Yangebup	750	250	1,000
	Total Local	**6,000**	**3,500**	**9,500**
Deli	Atwell Deli	-	250	250
	Hammond Road Deli	-	250	250
	Bolderwood Deli	-	250	250
	St Pauls	-	250	250
	Yangebup South	-	500	500
	Bibra Lake	-	750	750
	Churchill Ave	-	250	250
	Total Deli	**-**	**2,500**	**2,500**
	Local / Neighbourhood Centres	**18,750**	**12,000**	**30,750**

Local Commercial Strategy (City of Cockburn 2010)

APPENDIX 4

ENGINEERING SERVICING REPORT

Report Name:	Lots 1, Pt 802 and 803 Yangebup Road, LOTS 7, 99, 146 and 147 Hammond Road and Lot 4308 Beeliar Drive, Cockburn Central
Project No:	PC15099
Project Title:	Engineering Services Report

Cnr Goodwood Pde & Vivian St
Burswood WA 6100

PO Box 134
Burswood WA 6100

T 08 6336 9299
F 08 6336 9288

E enquire@peritasgroup.com.au
www.peritasgroup.com.au

Prepared by:	Monica Merryweather
Position:	Civil Engineer
Signed:	
Date:	18/12/2015

Approved by:	Enzo Biagioni-Froudist
Position:	Civil Principal
Signed:	
Date:	18/12/2015

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Recipients are responsible for eliminating all superseded documents in their possession.

Peritas Group Pty Ltd
ABN: 56 165 417 407
74 Goodwood Parade
BURSWOOD WA 6100

PO Box 134
Burswood WA 6100

Telephone: +61 8 6336 9299

Facsimile: +61 8 6336 9288
Internet: www.peritasgroup.com.au

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1. INTRODUCTION

Peritas Group was commissioned by Burgess Design Group to review the Engineering constraints and servicing requirements associated with the development of the subject land.

The subject land is Lots 1, PT 802 and 803 Yangebup Road, Lots 7, 99, 146 and 147 Hammond Road and Lot 4308 Beeliar Drive, Cockburn Central, comprises a total of 7.6ha approximately, and is located within the City of Cockburn, approximately 20 kilometres from Perth CBD. The subject land is bounded by Yangebup Road to the north, Hammond Road to the east, Beeliar Drive to the south and Lot 7 and Yangebup Lake to the West and North West. (See Appendix A, Location Plan)

In summary this report highlights:

- The subject land is capable of sustaining intensive development within the allowable development zone in keeping with the proposed commercial proposals.
- The land is capable of being connected to and provided with all essential services to sustain commercial development (based on current and future service authority planning).
- The proponent's strategy for the subject land will complement the natural landform by careful design of the earthworks and site grading.

This report also presents the proponent's commitments regarding further Engineering assessment of the site and has been compiled based on the following terms of reference:

- Briefing discussions and regular meetings with the client and the Consultant team.
- Site inspection with the Consultant team after formulation of the preliminary Local Structure plan to further refine concepts and development strategies.
- Site data and documents included on this report.
- Servicing concepts and Regional Strategic Infrastructure planning information from the regulatory authorities.

2. SITE EVALUATION

The land generally slopes from the East to the West. The site elevation varies between 20m AHD being the low point to 25.5m AHD

Site gradients range from medium sloping (1 in 20 to 1 in 20) to gentle slopes of 1 in 80 to 1 in 100. Greater than 50% of the subject land has gradients < 1 in 100.

The land will be regarded to suit commercial development and ensure that building lots are prepared for future improvements based on market expectations for this land zoning and development mix.

2.1. SITE GEOLOGY

The Geological Survey of WA map series (GSWA) 1:50000 mapping indicates that the study area is located within a zone consisting of Bassendean sand: quartz sand (dunes) and swamp and lacustrine deposits, peat, and peaty sand and clay.

A formal Site Geotechnical investigation is recommended to provide a detailed analysis and soil profiling across the site as well as determining the engineering properties of the materials encountered.

2.2. GROUND WATER

Based on information from the Department of Water, the groundwater generally flows in a westerly direction towards Yangebup Lake. The groundwater levels anticipated across the development site range from 16m AHD – 18.5m AHD which indicates that depth to groundwater generally ranges 4.0m – 6.0m below the natural surface. (See Appendix E for details).

2.3. SITE GRADING & EARTHWORK

2.3.1. General Principles & Approach

Site grading will generally be determined by the servicing requirements and Environmental and Geotechnical constraints of the site, in order to ensure sustainable as well as economic development of the infrastructure.

The natural landform will be reshaped within accepted guidelines and in accordance with the requirements for site servicing and building pad creation, however, natural drainage flow paths will be maintained wherever possible. (See appendix C and D for existing contour levels across the site).

Preparatory works should be limited to the following:-

- Site Preparation and demolition works
- Removal of fencing and other improvements as necessary.
- Stripping and grubbing of areas to be earthworked with due regards to vegetation preservation in selected areas.
- Strip and stockpiling topsoil.

- Cut to fill operations and imported fill to selected areas to improve geotechnical parameters for development.
- Stabilisation of any areas to be landscaped or where topsoil has not been respread on verges and embankments.

Site levels will be set in accordance with the following parameters:-

- Geotechnical and soil parameters to ensure that the site achieves appropriate site classification for its purpose.
- Fill levels to provide clearance to groundwater.
- Building pad levels to be designed to ensure that floor levels maintain a clearance of a minimum of 0.5m to the regional 1 in 100 year flood levels.

2.3.2. Clearing and Disposal

Wherever possible, cleared vegetative material will be collected and used in soil and land stabilisation or chipped and used as mulch. Debris from clearing which cannot be re-used will be disposed of in approved land fill sites in accordance with Local Authority policy.

Following clearing, the topsoil will be stripped and stockpiled on site for re-use.

2.3.3. Land Stabilisation & Dust Suppression

Prior to construction taking place, a construction water supply will be established to provide water for dust suppression, temporary sand stabilisation and irrigation during the construction phases. Water trucks and spray equipment will be on site throughout the construction programme to damp down exposed sand surfaces until the surface is physically stabilised. In the event that adjacent occupied homes or trafficked roads are affected by sand drift, a sand trapping fence will be constructed fronting the affected section of the development.

In the event of strong winds blowing towards adjacent properties that cause blown sand to reach those properties, earthworks, including the stripping or respreading of topsoil, will be temporarily suspended and dust suppression measures immediately implemented.

Stabilisation of the soil surface will be carried out, as required, immediately following topsoil re-spreading and minor regrading.

Soil stabilisation will generally comprise stockpiled topsoil respreading; however, Hydromulch without seed will also be used with Council Approval. Hydromulch with seed, or dry seeding, may also be employed in select locations with due care to utilise wherever possible local and native species.

Soil stabilisation will be maintained until such time as the vegetation cover is sufficient to prevent erosion.

3. STORMWATER DRAINAGE

The general stormwater drainage strategy will be designed under the criteria and requirements on the District Water Management Strategy.

The Stormwater Concept proposal will ensure :-

- Retention of all catchment runoff up to and including the 1 in 20 year ARI event within the development area. 1 in 100 year events will be discharged via the road network to the district drainage system.

- Stormwater from the 1-20 year events is to be retained and infiltrated on individual sites in keeping with council commercial stormwater discharge principles. In order to minimise the runoff from the lots, soakwells or other appropriate soakage systems will need to be provided within the lots. These will be designed to have the capacity to infiltrate and retain stormwater runoff generated from a 1 in 1 year storm event with appropriate first flush capture with and overflow (either direct or by surface grading) to the road drainage network during greater return period storm events greater than 1 in 20 year return period.

4. WASTEWATER DISPOSAL

Preliminary information from Water Corporation of WA indicates that there is a reticulated sewerage service network in the area, and construction planning has been underway for a number of developments to the north and east of the proposed development.

Therefore, it is anticipated that all lots within the proposed development area will be connected to the existing sewerage system available on all common boundaries with adjacent land holdings. (See Appendix F for existing Sewage network)

All internal sewer reticulation pipework will be designed and constructed to the standards and requirements of the Water Corporation of Western Australia. Standard Water Corporation water headwork charges will apply.

5. WATER SUPPLY

All internal water reticulation pipework will be designed and constructed to the standards and requirements of the Water Corporation of Western Australia.

A ring main feeder system will distribute water along the major arterial roads. Internal reticulation will then proceed from this ring main into the various collector roads and cul-de-sacs. (See Appendix G for the existing water supply & distribution network)

Standard Water Corporation water headwork charges will apply.

6. POWER, TELECOMMUNICATION & GAS

6.1. WESTERN POWER

It is anticipated that all lots within the proposed development will be served with underground power. This system will connect to the existing overhead/underground network located in adjoining roads. Standard Western Power conditions will apply. The cost of this work will need to be met in full by the developer.

It is likely that various pad mount sites will be required in selected locations within the development, however, due to the range of sizes of lots proposed within the development, it is not envisaged that there will be a problem in providing the sites strategically located to meet both Western Power design requirements and the requirements of the developer.

The street lighting throughout the development shall provide effective illumination for both pedestrian and vehicles.

(Refer to Appendix H) for existing power distribution network details.

6.2 TELECOMMUNICATION SERVICES

Information from Telstra indicates there is a service network within the area. It is anticipated that all lots within the proposed development will be served with Telstra Telecommunication services.

Telstra will design (developer to pay) and provide details for the installation of a pit and pipe network that will ultimately carry the cable network to serve the new lots with a telecommunication network. Alternatively, where cable routes match Western Power underground power supply routes, Telstra will wherever possible use the Western Power trenches in lieu of the developer providing additional trenching.

Telstra or other communications providers will cable the development once housing has commenced in the area and applications are made by individual owners for communications services to their lots. Headwork charges for Telstra services extensions are anticipated.

6.2 GAS SUPPLY

ATCo Gas has advised that reticulated gas services are available in the surrounding area.

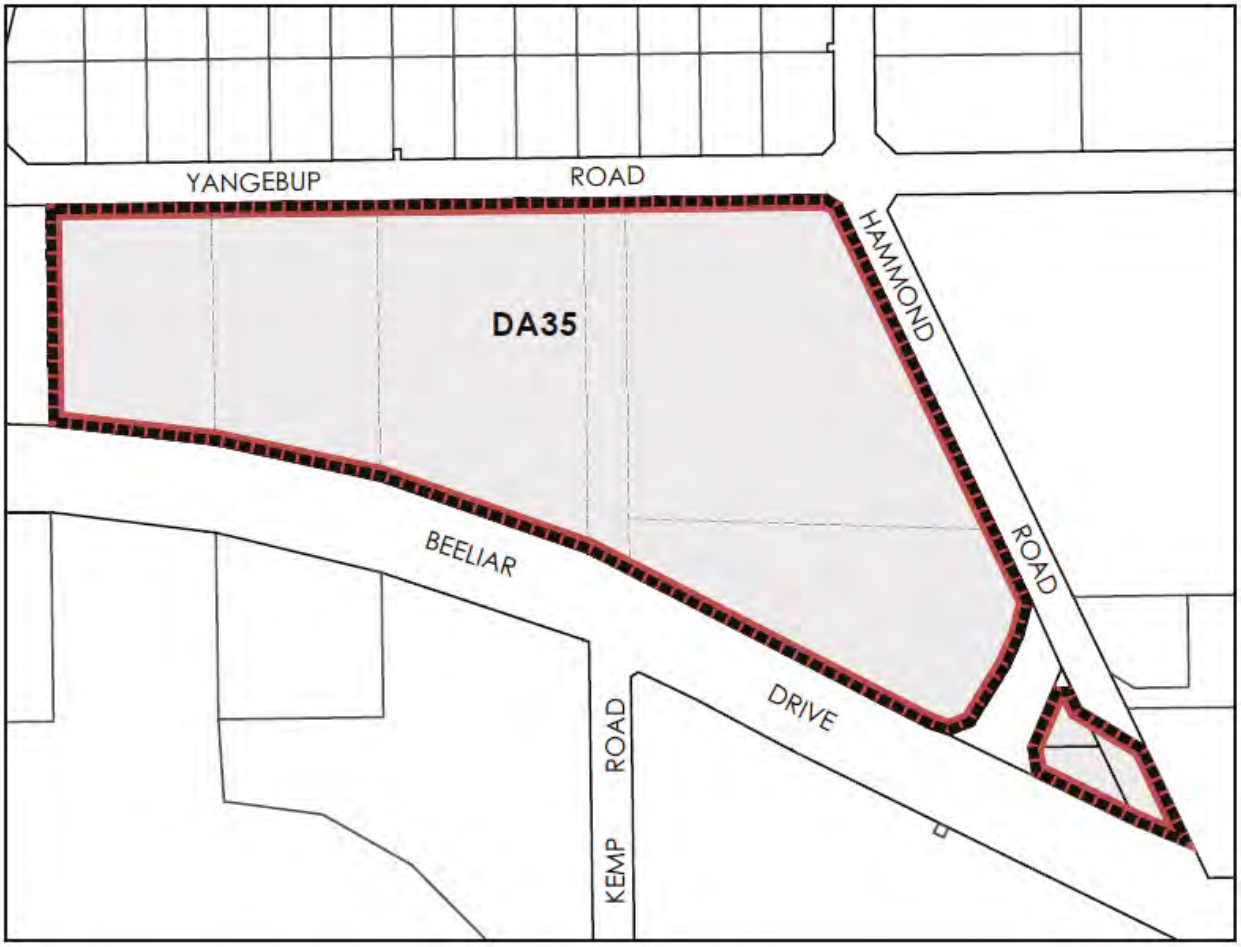
It is anticipated that this network will have sufficient capacity to service the development with reticulated gas services by extension of two existing mains.

7. CONCLUSIONS & RECOMMENDATIONS

Peritas Group does not envisage any major servicing constraints for the proposed development based on a stand-alone site development of the subject land.

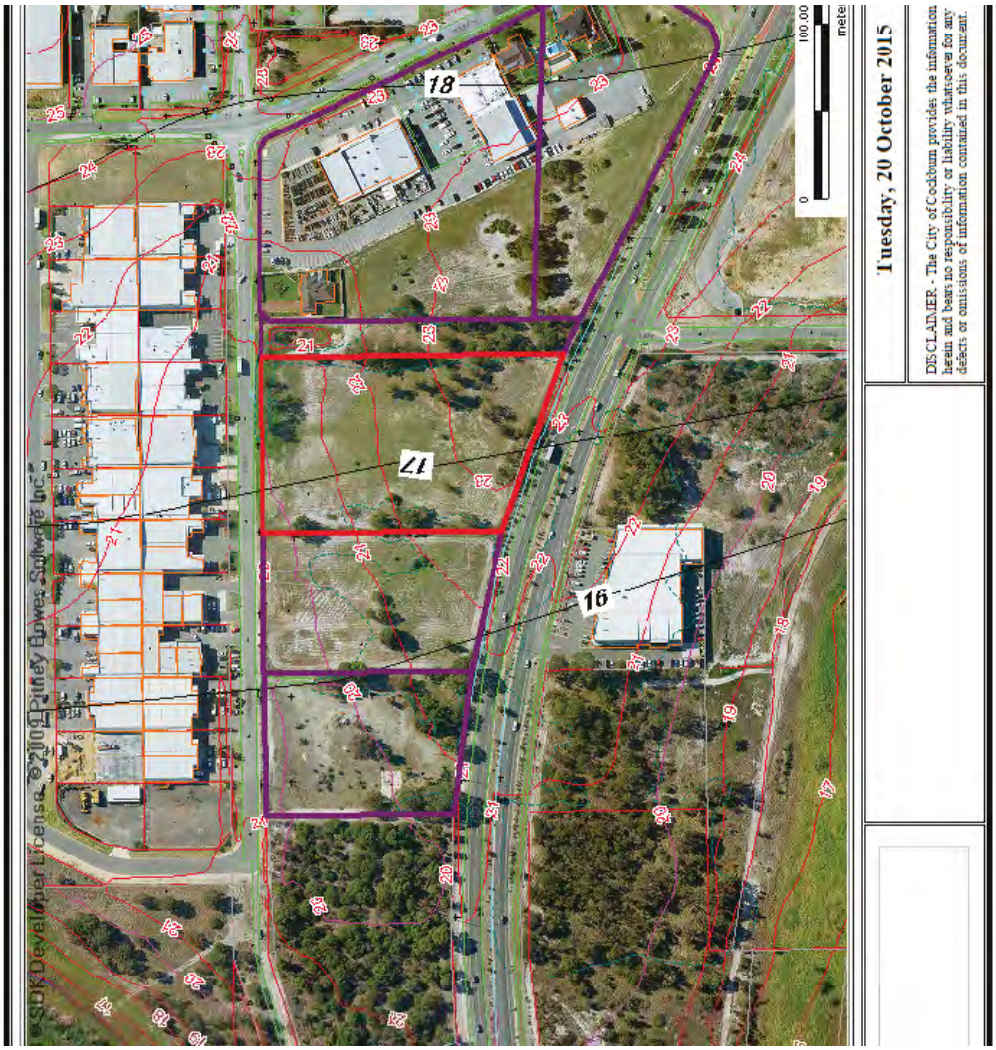
The site is capable of being serviced with all essential services, has no identifiable problematic soil conditions based on a visual site examination and desktop study of the site conditions (to be confirmed by geotechnical investigation) and with careful considered design would result in a high quality development.

APPENDIX A – LOCATION PLAN

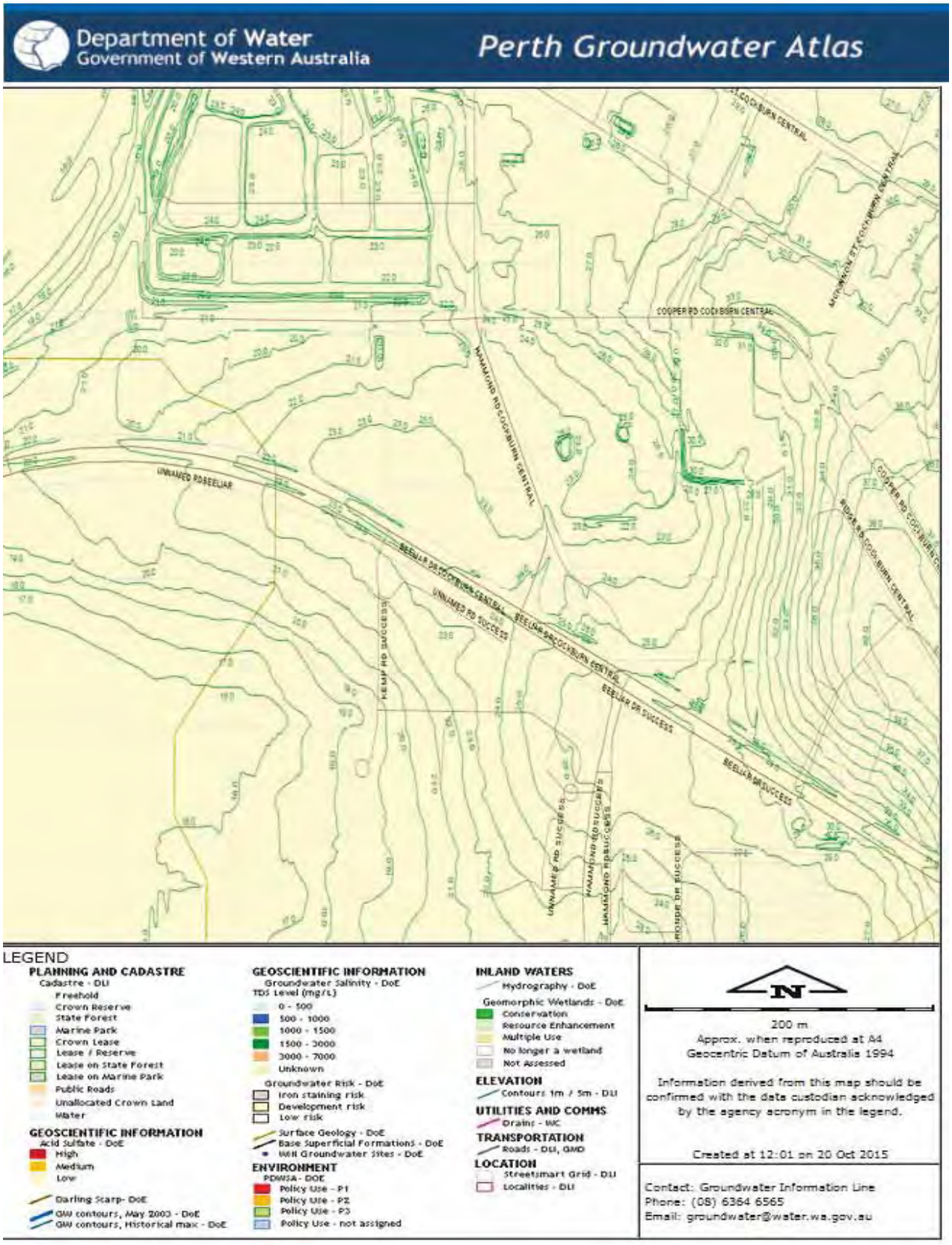


APPENDIX B – CONCEPT SITE PLAN

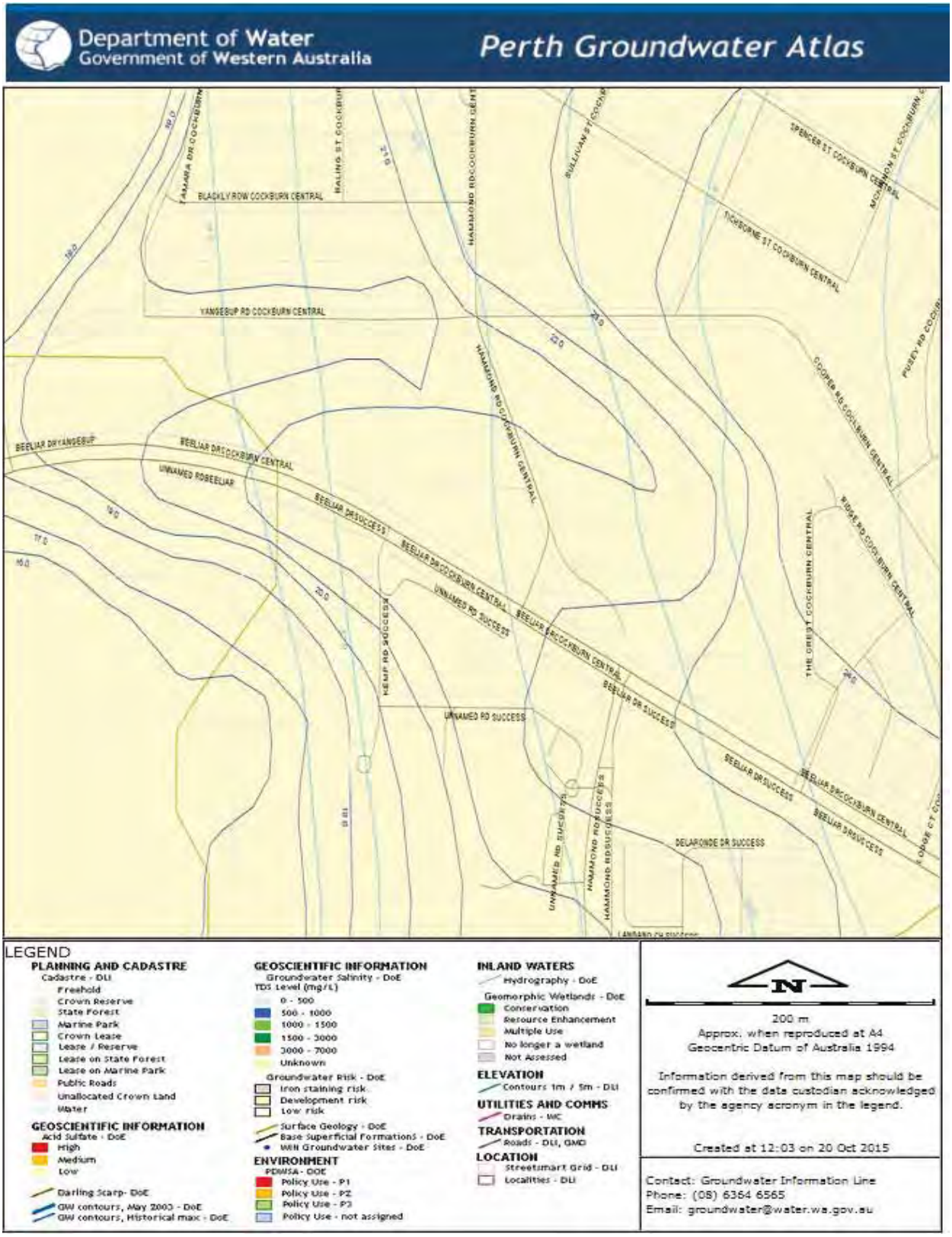
APPENDIX C – TOPOGRAPHICAL FEATURES PLAN



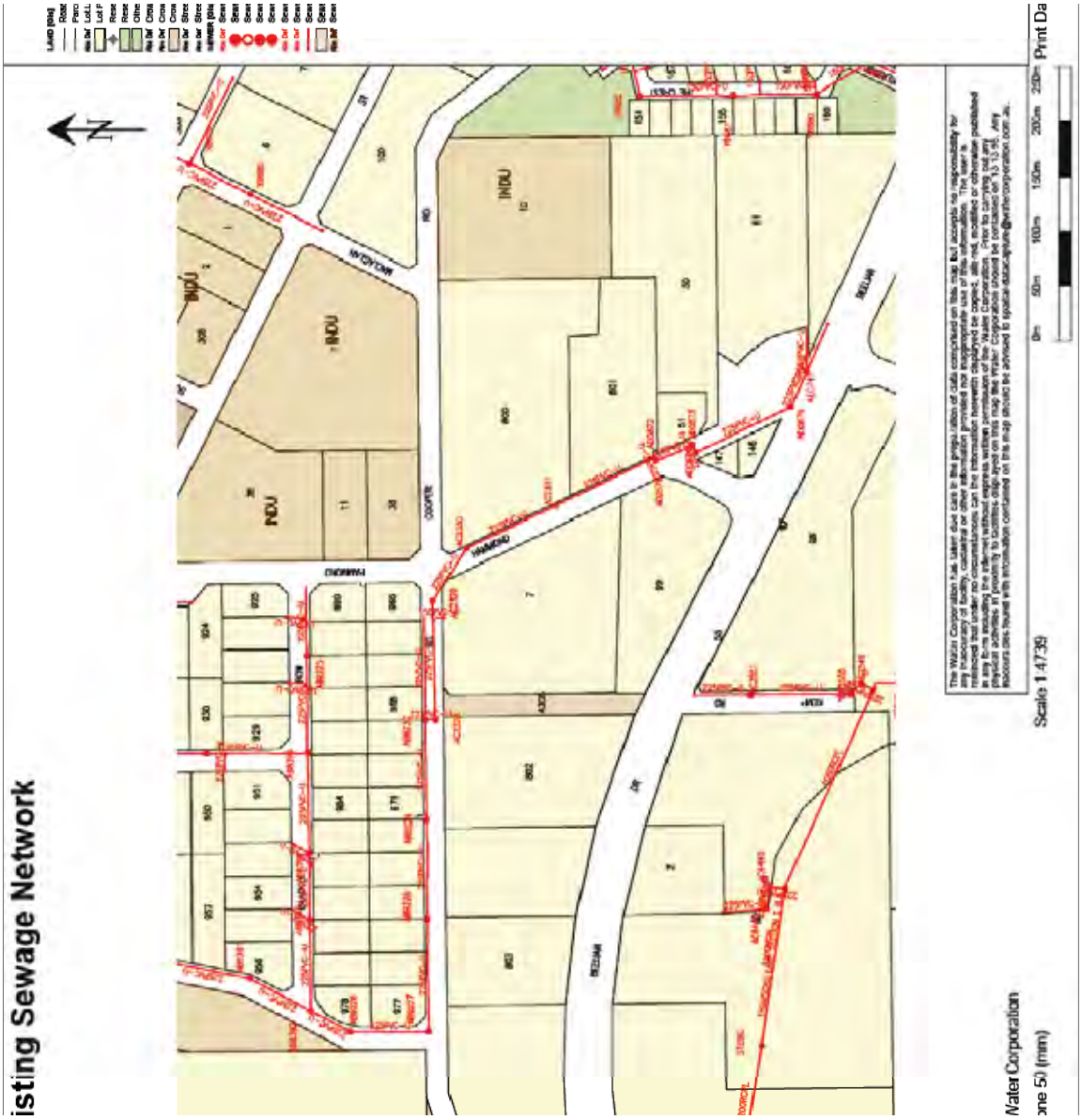
APPENDIX D – NATURAL SURFACE CONTOURS



APPENDIX A - GROUNDWATER CONTOUR



APPENDIX B – WASTE WATER DISPOSAL- EXISTING SEWERAGE NETWORK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Water Corporation

APPENDIX C – WATER SUPPLY EXISTING NETWORK

APPENDIX D – WESTERN POWER – EXISTING NETWORK