COCK/2015/145

COOLBELLUP TOWN CENTRE STRUCTURE PLAN

Lots 1, 2, 3 and 101 Coolbellup Avenue;
Portion of Lot 301 Waverley Road; and
Portion of Lot 300 and Lots 500 and 501 Cordelia Avenue,
Coolbellup

March 2016
Coolbellup Hotel Pty Ltd

Creative DESIGN+PLANNING

COCK/2015/145

COOLBELLUP TOWN CENTRE STRUCTURE PLAN

MARCH 2016

Prepared for: **Coolbellup Hotel Pty Ltd**

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DOCUMENT STATUS

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7 (DPS)	CoC/WAPC Approval (April 2013)	JAH	04.02.2013	FRA	11.02.2013
4	'Variation 1' - LSP Update	JAH	31.08.2015	FRA	03.09.2015
5	'Variation 1' - LSP Update (Oct 2015 Regs)	MM	30.10.2015	JAH	09.11.2015 13.11.2015 (reissue)
6	'Variation 1' – LSP Update (WAPC Comments)	MM	30.03.2016	JAH	30.03.2016

ENDORSEMENT PAGE

This structure plan is prepared under the provisions of the City of Cockburn Local Planning Scheme No. 3.

THIS STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE CITY OF COCKBURN ON:

14 February 2013

In accordance with Schedule 2, Part 4, Clause 28 (2) and refer to Part 1, 2. (b) of the *Planning and Development (Local Planning Schemes) Regulations 2015.*

Date of Expiry: **19 October 2027**

Table 1: Table of Amendments to Part One and Structure Plan (Plan 1)

AMENDMENT NO.	SUMMARY OF AMENDMENT	AMENDMENT TYPE	DATE APPROVED BY WAPC
1	Revision to all Precincts and applicable land uses.	Major Amendment	06 May 2016

EXECUTIVE SUMMARY

The *Coolbellup Town Centre Structure Plan* (the 'Structure Plan') has been prepared to guide the subdivision and development of approximately 6.06 hectares of land within Development Area 7 of the City of Cockburn's Town Planning Scheme No. 3.

Purpose

The Structure Plan provides an overarching planning framework to guide and facilitate the development of a small *Neighbourhood Centre* for mixed use purposes, including commercial activities (shop-retail, office etc), high-density residential and civic purposes; this prepared in accordance with the *Planning and Development (Local Planning Schemes) Regulations 2015*.

This Structure Plan provides for an integrated and coordinated approach to land use planning, necessary to create a strong and vibrant Town Centre for the Coolbellup community.

Executive Summary Table

ITEM	DATA	STRUCTURE PLAN REF (SECTION NO.)
Total area covered by structure plan	6.059 hectares	Part One – Plan 1 Part Two – Section 3.1
Area of each land use proposed: Zones - Local Centre - Public Purpose (Civic) - Public Purpose (Primary School)	 3.1632 hectares 0.7521 hectares 2.1439 hectares	Part One – Plan 1
Target Dwelling Yield (*Local Centre Component*)	~48 – 80 dwellings Based on 15 – 25 dwellings per *gross hectare* (SPP 4.2)	Part One – Provision 4
Estimated area and percentage of Public Open Space given over to: • Local parks • Neighbourhood Parks	0 hectares	Part One – Provision 4

CONTENTS

PART ONE – IMPLEMENTATION

PART TWO - EXPLANATORY SECTION

APPENDICES

ABBREVIATIONS

ABGR	Australian Building Greenhouse Rating
AHG	Australian Height Datum
AASS	Actual Acid Sulfate Soils
ASS	Acid Sulfate Soils
AS	Australian Standard
CBD	Central Business District
CPTED	Crime Prevention Through Environmental Design
DA	Development Area
DAP	Detailed Area Plan
DCA	Development Control Area
DCP	Development Control Policy
DEC	Department of Environment and Conservation
DIA	Department of Indigenous Affairs
DoP	Department of Planning
DoW	Department of Water
EPA	Environmental Protection Authority
ESD	Environmentally Sustainable Development
FMP	Foreshore Management Plan
Ha	Hectare
HV	High Voltage
Km	kilometre
kV	kilovolt
LWMS	Local Water Management Strategy
MHHW	Mean Higher High Water
MLLW	Mean Lower Low Water
MRS	Metropolitan Region Scheme
MSL	Mean Sea Level
MVA	Megavolt Ampere
NatHERS	Nationwide House Energy Rating Scheme
NFA	Net Floor Area
POS	Public Open Space
PSP	Primary Shared Path
R-AC Code	Residential Activity Centre Code
RL	Reduced Level
TMP	Traffic Management Plan
TOD	Transit Oriented Development
UWMP	Urban Water Management Plan
WC	Water Corporation
WAPC	Western Australian Planning Commission
WAWA	Water Authority of Western Australia
WSUD	Water Sensitive Urban Design
ZS	Zone Substation

PART ONE

Implementation

COOLBELLUP TOWN CENTRE STRUCTURE PLAN

1. Structure Plan Area
2. Operation
3. Staging
4. Subdivision and Development Requirements
5. Local Development Plans
6. Other Requirements
7. Structure Plan (Plan 1)

PART ONE - IMPLEMENTATION

This Structure Plan comprises the following sections:

- **Part One – Implementation**, includes the Structure Plan (**Plan 1**) and outlines the requirements that will be applied when assessing subdivision and development applications over the land to which the structure plan relates.
- **Part Two – Explanatory Section,** is to provide justification and clarity to the Structure Plan (**Plan 1**) and the textual provisions contained in Part One of the Structure Plan. Part Two is to be used as a reference to guide interpretation and implementation of Part One.
- **Part Three – Appendices,** includes additional information prepared by specialist consultants in support of Parts One and Two.

1 STRUCTURE PLAN AREA

The Coolbellup Town Centre Structure Plan ('Structure Plan'), applies to Lots 1, 2, 3 and 101 Coolbellup Avenue, Portion of Lot 301 Waverly Road, Portion of Lot 300 and Lots 500 and 501 Cordelia Avenue, being the land contained within the inner edge of the line denoting the boundary on the Structure Plan (**Plan 1**).

2 OPERATION

This Structure Plan comes into effect on the date it is approved by the Western Australian Planning Commission.

3 STAGING

Staging will be guided by the development intentions of each respective landholder within the Structure Plan area.

Lot 1 Coolbellup Avenue is projected to be the first site redeveloped for mixed use purposes; this being the only vacant lot within the Structure Plan area and with immediate development intentions.

The Structure Plan area is a brown-field site and with immediate access to all service infrastructure resources.

4 SUBDIVISION AND DEVELOPMENT REQUIREMENTS

1. Zones	1.1	Land Use permissibility within the Structure Plan area shall be in accordance with the Structure Plan (**Plan 1**) and corresponding Zone or Reserve under the Scheme.
2. Site Interface	2.1	All development within the Structure Plan area shall have due regard to the adjoining land uses, including built form – design, bulk, scale and height, noise attenuation and the like.
3. Public Open Space	3.1	Provision of Public Open Space is not required within the Structure Plan area. Pedestrian amenity areas and internal path networks are encouraged within the Structure Plan area; this to complement the established public infrastructure and Parks and Recreation Reserve external to the site.
4. Density Targets	4.1	Density targets within the Structure Plan area are guided by: • WAPC's *Directions 2031* and accompanying *Outer Metropolitan Perth and Peel, Sub-Regional Strategy*, namely a 'Connected City' ratio of 15 dwellings per 'gross urban zone'; and • WAPC's State Planning Policy (SPP) 4.2 – *Activity Centres for Perth and Peel*, namely 15 – 25 dwellings per 'gross hectare'.
	4.2	Subdivision and development within the Structure Plan area shall have due regard to the approved Residential – R80 density coding.

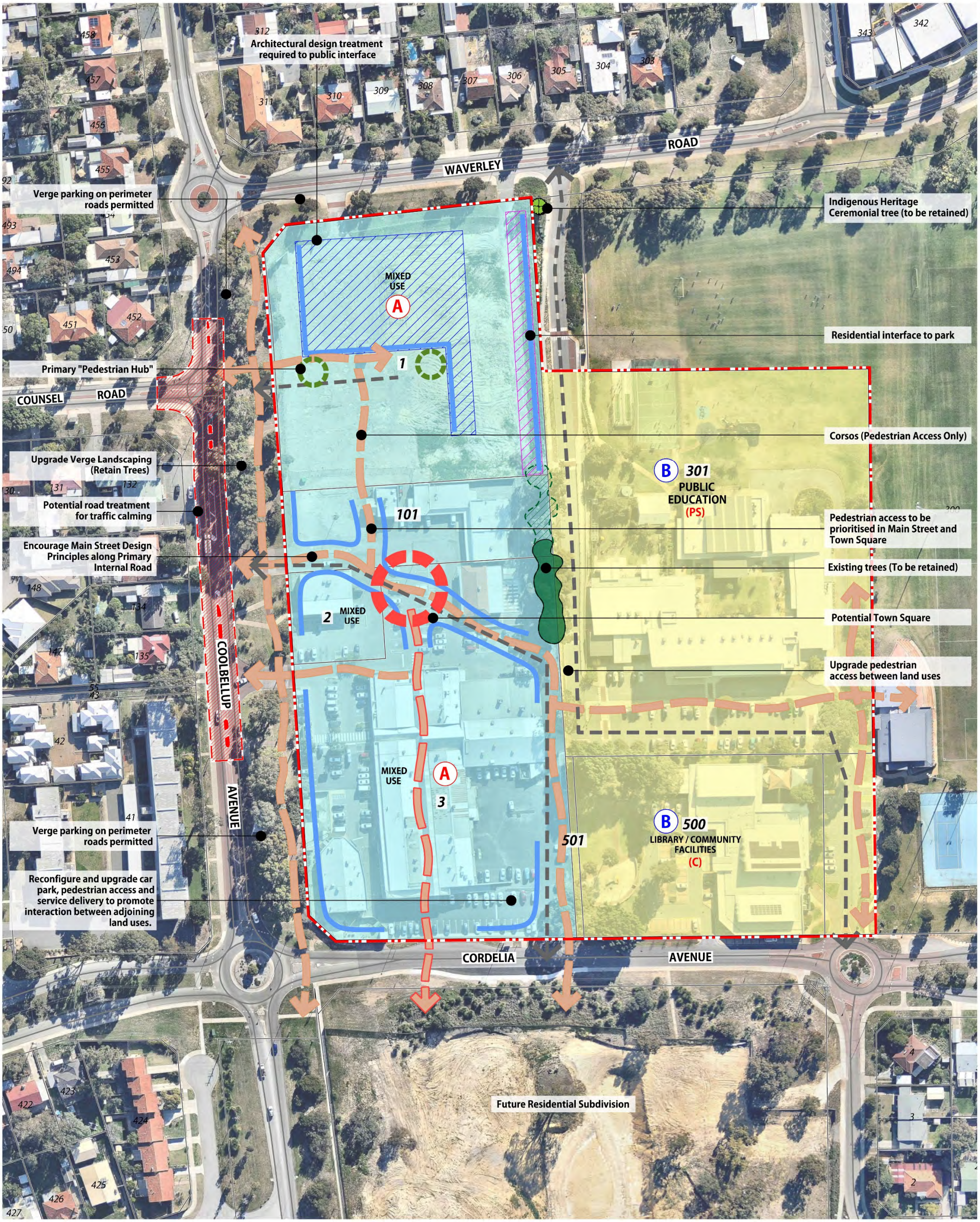
5 LOCAL DEVELOPMENT PLANS

A Local Development Plan (LDP) is required to vary *Deemed to Comply* provisions of the Residential Design Codes (R-Codes).

A Local Planning Policy, as provided for in the R-Codes, may also be adopted by the local government to detail variations to the *Deemed-to-Comply* provisions.

6 OTHER REQUIREMENTS

The Structure Plan area is subject to a City of Cockburn *Developer Contribution Plan* for community infrastructure (DCP13); this to apply to all land within the Structure Plan area to be subdivided and/or developed for residential purposes.



LEGEND:

LOCAL PLANNING SCHEME RESERVES

- Public Purposes
  - Denoted as:
  - (PS) Primary School
  - (C) Civic

LOCAL PLANNING SCHEME ZONES

- Local Centre (Residential 80)

OTHER

- Structure Plan Boundary
- Important Interface
- Primary Internal Access Way (Vehicles)
- Traffic calming devices aligned with existing footpath network
- Pedestrian Link
- Pedestrian Link (Business Hours)
- Existing Trees (Subject to Removal)
- Existing Trees (To be Retained)
- Pedestrian Hub
- Potential Town Square
- (A) Mixed Use Precinct
- Indicative Commercial Building Envelope
- Indicative Residential Building Envelope
  Local Development Plan required for RCodes variation
- (B) Public Purpose Precinct

NOTE: The north-south corsos, Main Street and Town Square will be subject to an easement in gross, required to be attached to any future Strata Plan to ensure the general public has legal access to these spaces at all times.

nearmap

COOLBELLUP TOWN CENTRE STRUCTURE PLAN (PLAN 1)

Lots 1, 2, 3 and 101 Coolbellup Avenue, Portion of Lot 301 Waverley Road, Portion of Lot 300 and Lots 500 and 501Cordelia Avenue, COOLBELLUP

for: Coolbellup Hotel Pty. Ltd.

Scale 1:1,000 @ A2 | N.T.S. @ A3

0 10 20 30 40 50 metres

COMPILED: CD+P		DRAWN BY:	LW/RF
DATE:	31/01/2013	REVISED:	12/11/2015
GRID:	MGA 50	DATUM:	AHD
DRAWING NUMBER:	CHOCO-2-001b	JOBCODE:	CHOCOCON

FILE ID: M:\CHOCO\BASE\STRUCTURE PLANS\CHOCO-2-001b.dgn

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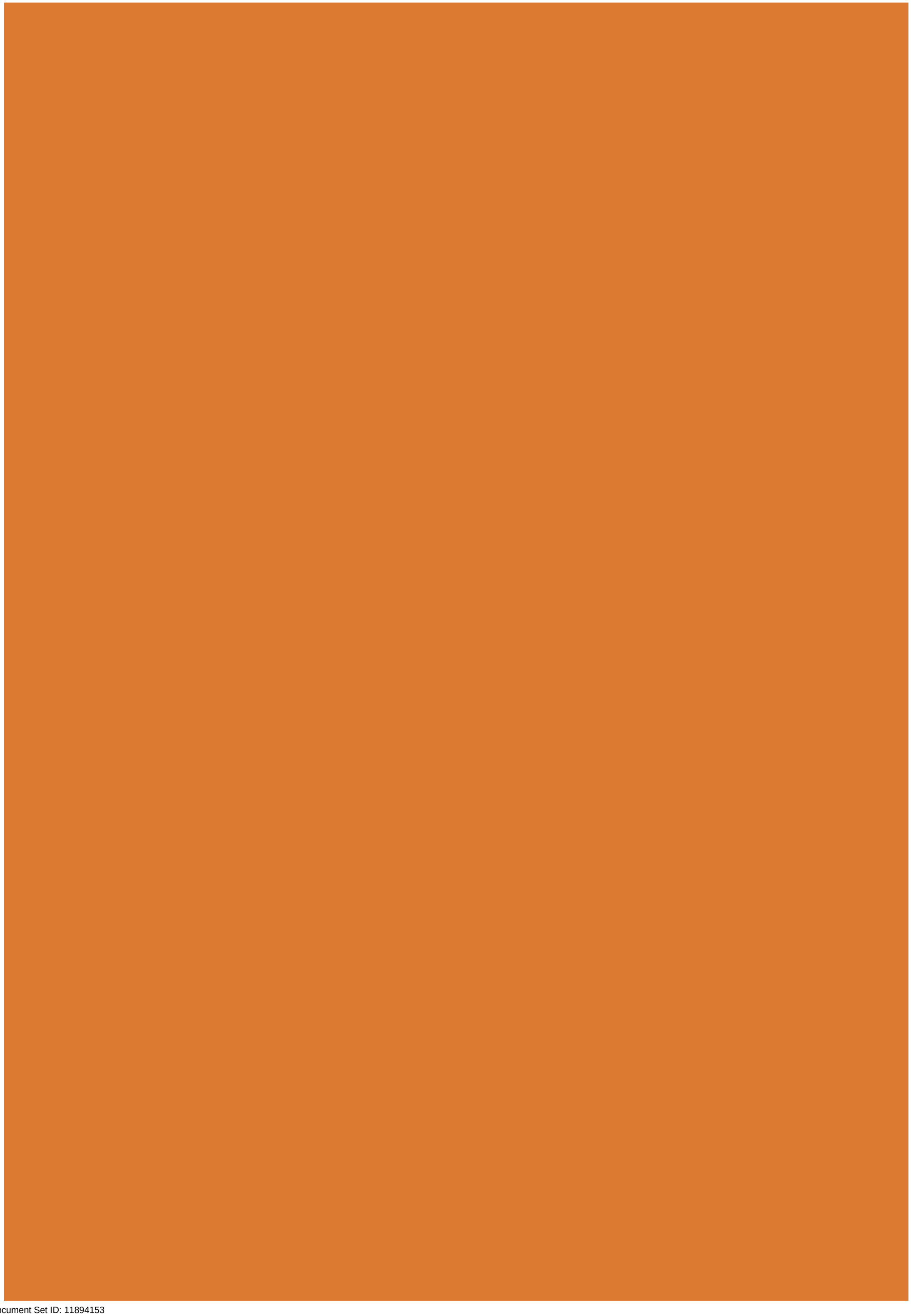


PART TWO

Explanatory Section

COOLBELLUP TOWN CENTRE STRUCTURE PLAN

1. Introduction
2. Statutory & Strategic Considerations
3. Context Analysis
4. Structure Plan Design Principles
5. Precincts
6. Implementation & Staging

PART TWO - EXPLANATORY SECTION

1 INTRODUCTION

The Coolbellup Town Centre Structure Plan (Structure Plan) provides the statutory framework and design philosophy for future development of the Coolbellup Town Centre.

The Coolbellup Town Centre is designated within the *City of Cockburn Town Planning Scheme No.3* (Scheme) as *Development Area No.7 (DA7)*. The Scheme outlines that a Structure Plan shall apply to the land in order to guide subdivision and development. The Structure Plan is to provide for an integrated town centre with a mix of commercial, residential, recreation, civic and education facilities.

The identification of opportunities and constraints in the local context enables the Structure Plan to provide a list of objectives and principles which will guide the future development outcomes of the Coolbellup Town Centre. These objectives and principles are to provide some measure of flexibility throughout the detailed design process, hence enabling the Town Centre the ability to respond to evolving needs and market trends at the time of development.

The Structure Plan was formally adopted by the City of Cockburn on the 14th February 2013; this following advice from the Western Australian Planning Commission that their endorsement under Clause 6.2.10 of the Scheme was not required as the Structure Plan did not facilitate subdivision as defined by the Scheme.

1.1 Background

In 2001, the City of Cockburn requested the Department of Housing and Works (DHW) and the Department for Planning and Infrastructure (DPI) undertake a joint planning study of the Coolbellup Town Centre. A consequent *Enquiry by Design* community consultation workshop investigated options for the redevelopment of the underperforming Coolbellup Town Centre. One of the options investigated – 'Scenario 3' – involved the relocation and redevelopment of the Coolbellup Town Centre to the former Koorilla Primary School site and development of the existing site for residential purposes. In February 2004, Council resolved to pursue 'Scenario 3' as the preferred option.

In 2007 commercial consultant, Syme Marmion & Co, was engaged by the Council to assess the redevelopment options for the Coolbellup Town Centre. Syme Marmion concluded that 'Scenario 3' was not feasible and recommended that other options be investigated. Other options included:

- Redevelopment and refurbishment of the existing centre with surplus land developed for residential uses;
- Relocation of the shopping centre to the corner of Coolbellup Avenue and Waverley Road (hotel site) and redevelopment of the current shopping centre site for residential uses; or
- Do nothing leaving owners to undertake repairs, upgrades and refurbishment on an as needs basis.

This conclusion and options were presented to Council in December 2007, with resolution to seek community, land owner and tenant feedback on the options and proposals prepared by Syme Marmion. This consultation was undertaken from November 2008 to January 2009. Analysis of the submissions received and the issues relevant to the project were presented to Council in July 2009. At this meeting the Council concluded that due to financial risks, the City should not resume the land or proceed any further with the project, but rather encourage the owners to self-fund further studies of redevelopment options.

The proposal now being considered in this report and accompanying Structure Plan (Plan 1) has been prepared by the proprietors of the Coolbellup Hotel site (corner of Coolbellup Avenue and Waverley Road) in conjunction with the City of Cockburn.

A Development Application for proposed Mixed Use (Commercial/Retail) development at Lot 1 Waverley Road, Coolbellup was approved by the *Metro South-West Joint Development Assessment Panel* (JDAP) at its meeting 13 November 2013 (DAP/13/00663). A subsequent application to amend the approval to include 'Dual-Key' dwelling product was granted by the JDAP at its meeting 9th April 2015. The current approval (as amended) for Lot 1 incorporates a Mixed Use development of 150 Multiple Dwellings and 9 Commercial Units.

Since approval of this amended Development Application in April 2015, the landowners of Lot 1 have been approached by a major supermarket operator who has identified that this site is ideally located to accommodate a future 'full-line' supermarket. This 'Variation 1' version of the Structure Plan amends the originally adopted Structure Plan to provide flexibility to enable the delivery of a major supermarket on Lot 1, and offer further diversification of the central and southern portions of the site, without prejudicing the remaining landowners. Importantly, by virtue of the pro-activeness and engagement of the landowner of Lot 1, this amended version of the Structure Plan will progress the staged redevelopment and improvement of the Coolbellup Town Centre and continue the revitalisation commitment.

Notwithstanding the challenges of multiple landownership across the broader Town Centre site, the proposal demonstrates suitable linkages and integration between the original and now cleared Hotel site, core shopping centre and other community and recreational land uses encompassed by the Structure Plan boundary.

The proposed Structure Plan is not intended to be the 'ultimate' design for the Town Centre. Rather the Structure Plan design provides a framework for more detailed development, thus enabling more active proponents to progress their respective developments without reliance on other landowners within the Town Centre. This however will not be to the detriment of those proponents not developing in the short-medium term, acknowledging that the objectives and design principles prescribed by the Structure Plan ensure a consistent approach to road design and built form. The longer term proponents will have capacity to review the Structure Plan in due course, and may vary the Structure Plan design based on the established built form on adjoining sites at the time of development.

1.2 Location

The site is bound by Coolbellup Avenue to the east, Waverley Road to the north and Cordelia Avenue to the south. The eastern boundary of the site abuts Len Packham Park, a large active public open space area. **Figures 1** and **4** provide a regional and local context to the site.

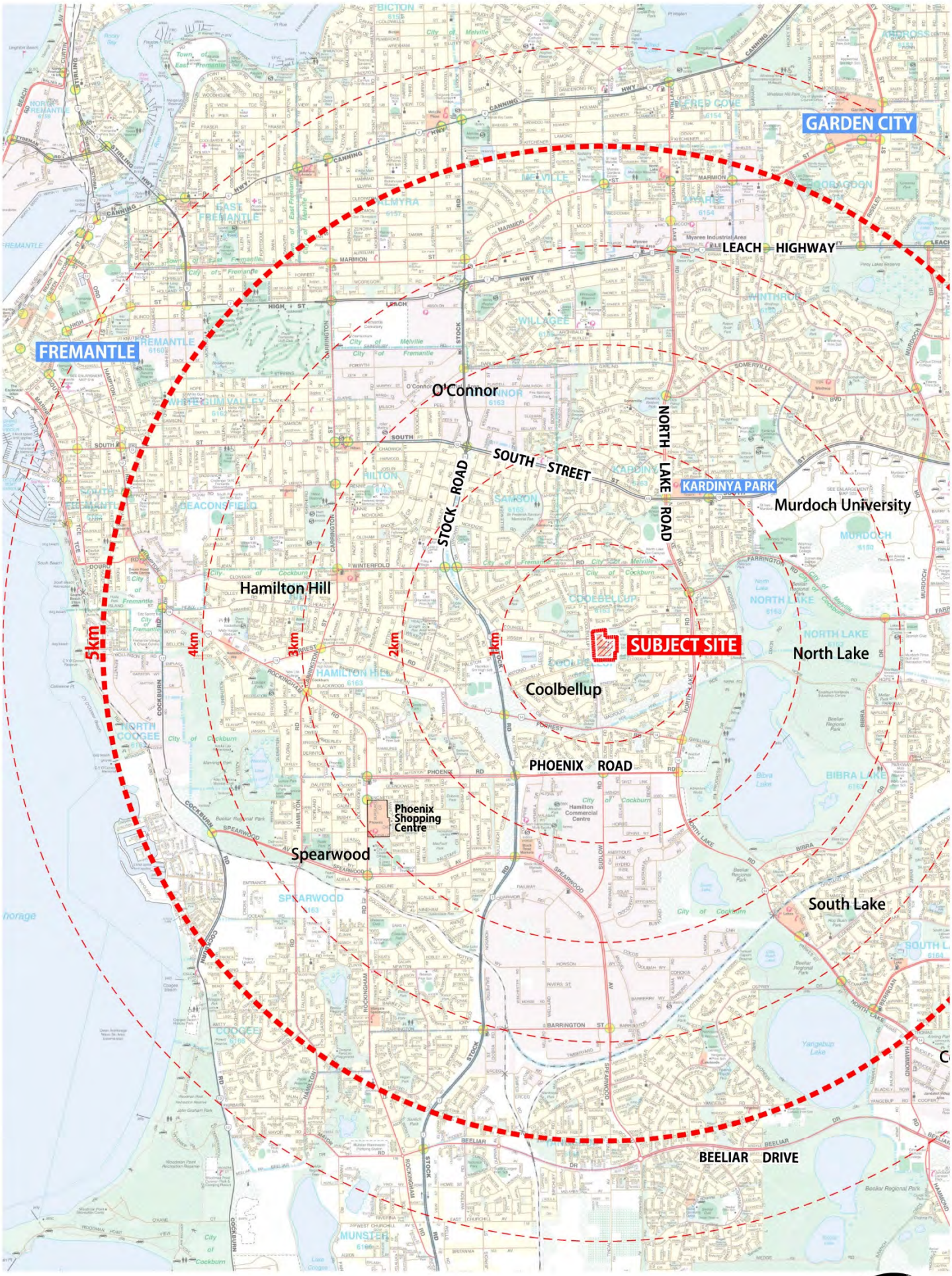
1.3 Land Ownership and Land Use

The existing commercial tenancies are sporadically developed within 10 separate buildings over 4 individual landholdings.

The subject site comprises the following lots and general land uses:

Lot	Area (ha)	Owner	Land Use
1	1.1776	The Cooby Hotel Pty Ltd	Vacant site (formerly Hotel with JDAP approval for Mixed Use Development)
2	0.1385	Nightview Pty Ltd	Liquor Store
3	1.4919	Strata Company - Strata plan 21160 31 strata titles	Commercial, Medical Centre, child care centre, shopping centre (29 strata titles)
101	0.3552	Stata Company - Strata Plan 26173 6 strata titles	Commercial, including a fast food outlet
Portion Lot 300 *Reserve 30190 Cordelia Ave*	0.1474	City of Cockburn	Parks and Recreation (Total site 4.7301ha)
Portion Lot 301 *Reserve 48385 Waverley Road*	2.1434	Department of Education	Primary School
Lot 500	0.7301	City of Cockburn	Library
Lot 501 *Reserve 50337 Cordelia Ave*	0.0220	City of Cockburn	Easement

NB. Lots 1, 2, 3 and 101 share reciprocal rights of access and car parking between titles.



REGIONAL CONTEXT PLAN

Figure 1

NORTH

0 500 1000 1500m

Scale: 1:50,000@A4 Date: 16/07/2015 Plan: CHOCO-5-001

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2 STATUTORY & STRATEGIC CONSIDERATIONS

2.1 Metropolitan Region Scheme

The site is zoned 'Urban' under the Metropolitan Region Scheme.

2.2 WAPC: State Planning Policy 3 – *Urban Growth & Settlement*

This SPP sets out the principles and considerations that apply to planning for future settlements and urban growth in Western Australia. The policy encourages building on existing communities and enhancing quality of life in those communities as well as managing growth and development of areas and promoting the development of a sustainable and liveable neighbourhood.

The Structure Plan as outlined throughout this report is consistent with the objectives stated in the policy.

2.3 WAPC: Directions 2031 & Beyond Draft Spatial Framework for Perth and Peel

Directions 2031 & Beyond is a high level strategic plan that establishes a vision for future growth of the Perth and Peel region; and provides a framework to guide the detailed planning and delivery of housing, infrastructure and services necessary to accommodate that growth. The document estimates that an additional 328,00 dwellings will be required in the coming 20 years.

Directions 2031 has set a target of 47% of the required 328,000 dwellings being infill development, which is 154,000 dwellings to be provided through infill developments. The proposed Structure Plan represents an infill residential development and will contribute towards meeting this target.

Directions 2031 also sets a target of 15 dwellings per gross urban zoned hectare in new development areas. The high residential density proposed in this Structure Plan is expected to generate far greater than 15 dwellings per hectare throughout, thus exceeding the expectations of State Policy in this instance.

Directions 2031 also encourages developing and revitalising activity centres as attractive places to invest, live and work. The Structure Plan will guide the revitalisation of the Coolbellup Town Centre.

2.4 WAPC: Draft Outer Metropolitan Perth & Peel *Sub-Regional Strategy*

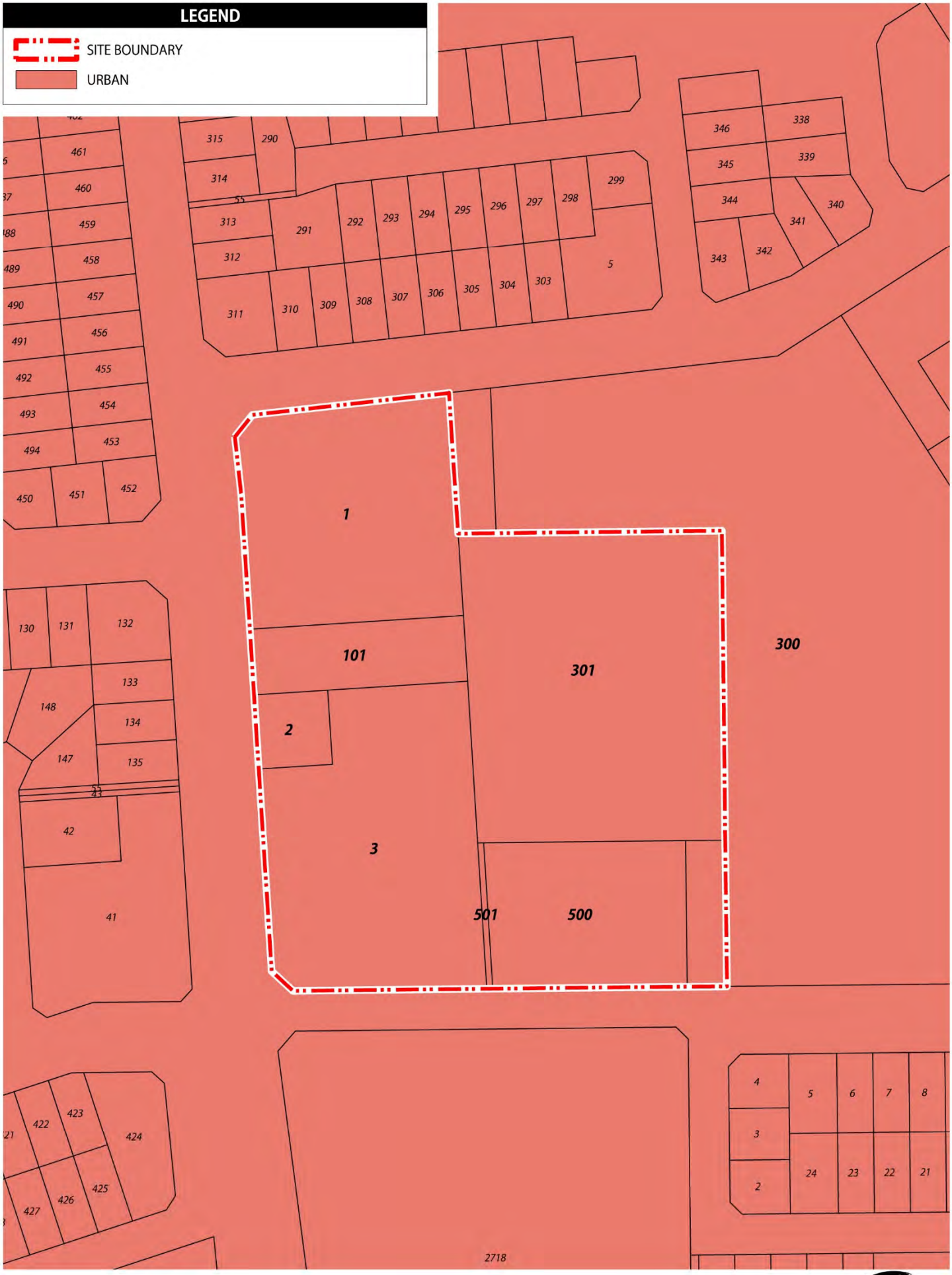
This Strategy outlines that in order to meet the housing targets set by *Directions 2031* growth will need to focus on targeted locations of future urban growth such as in and around retail and employment centres and will need to apply high R-Codes within areas that have close proximity to educational and community facilities and services such as medical centres and libraries.

The proposed Structure Plan is consistent with this focus given that the site forms a lower order *Neighbourhood Centre* and is adjacent to a public Primary School and library facilities as well as a medical centre.

2.5 WAPC: Draft Perth & Peel@3.5million

The draft *Perth and Peel@3.5 million* report sets the context for the four draft sub-regional planning frameworks. The frameworks build upon the principles of *Directions 2031* and once finalised the frameworks will become sub-regional structure plans to provide guidance for future urban development and supporting infrastructure.

The subject land is identified as 'Urban' under the draft *South Metropolitan Peel Sub-regional Planning Framework*.



METROPOLITAN REGION SCHEME

Figure 2

Scale: 1:2500@A4 Date: 30/10/2015 Plan: CHOCO006a

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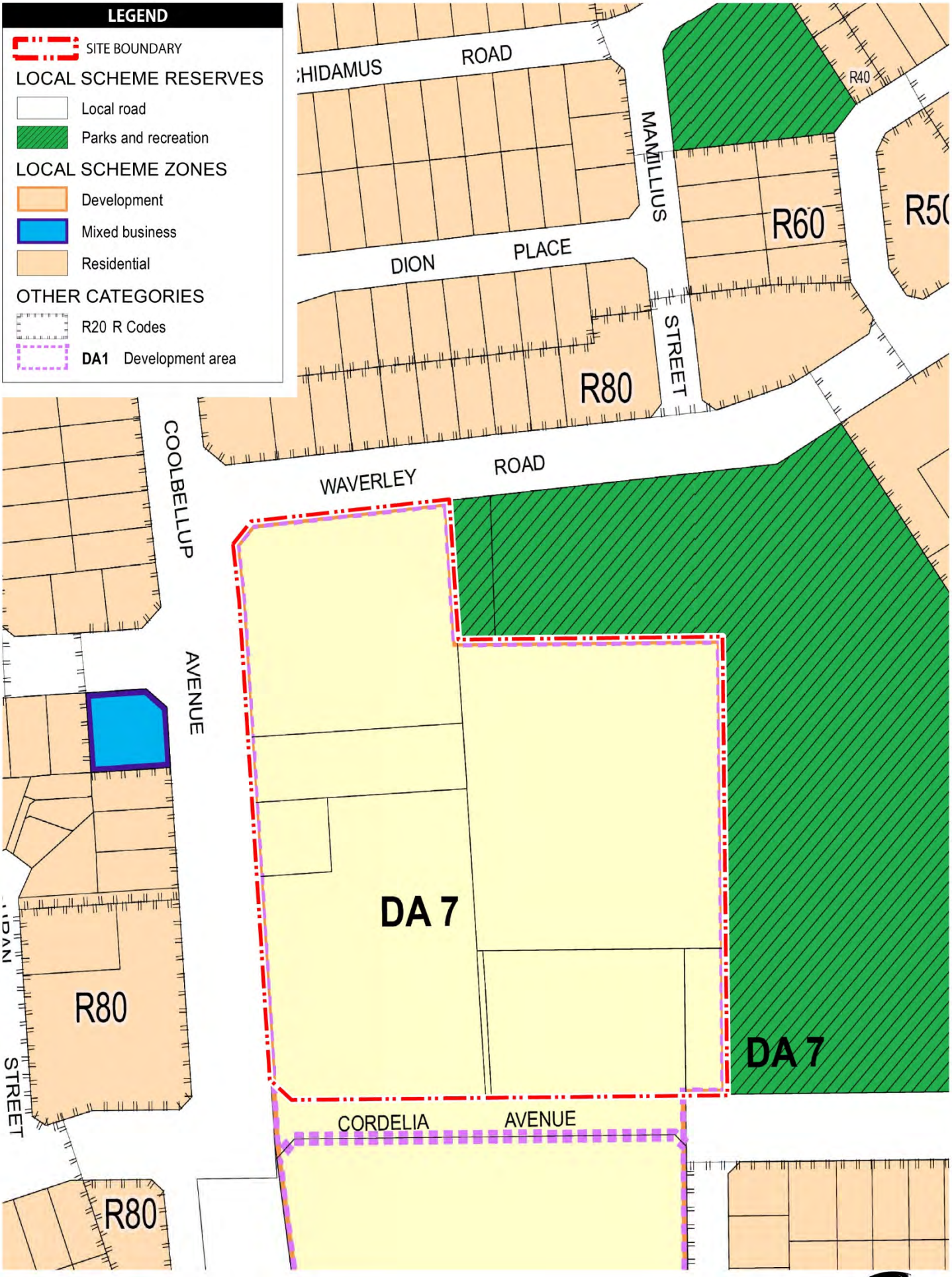

CITY OF COCKBURN - TPS No. 3

Figure 3

NORTH

0 25 50 75m

Scale: 1:2500@A4 Date: 06/11/2015 Plan: CHOCO005a

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2.6 WAPC: State Planning Policy 4.2 – *Activity Centres for Perth & Peel*

One of the main purposes of this policy is to specify the broad planning requirements for redevelopment and renewal of existing centres in Perth and Peel.

The Coolbellup Town Centre can be described as a '*Neighbourhood Centre*' as provided for in Table 3 of the SPP 4.2. In summary, *Neighbourhood Centres* are important local community focal points that help provide for the main daily to weekly household shopping and community needs, and they are also a focus for medium density housing.

SPP 4.2 encompasses the following principles relevant to this Structure Plan:

- Encourage the inclusion of a mix of land uses in activity centre Structure Plans;
- Higher density housing should be incorporated within and immediately adjacent to activity centre to establish a sense of community and increase activity outside normal business hours;
- The desirable residential density within neighbourhood centres is 25 dwellings per gross hectare;
- Smaller scale offices and commercial tenancies should be facilitated in neighbourhood centres;
- Horizontal and vertical integration of compatible land uses should be facilitated through planning decisions; and
- Activity centres should be accessible by cars, public transport, walking and cycling.

The proposed Structure Plan addresses all of the relevant principles and objectives of SPP 4.2 as detailed later in this report.

2.7 Liveable Neighbourhoods

A number of the objectives and requirements of Liveable Neighbourhoods are relevant to the proposed Structure Plan.

The proposed Structure Plan is consistent with the following objectives of Liveable Neighbourhoods:

- To develop a coherent system of compact walkable neighbourhoods which cluster to form towns with relatively intense, mixed use town centres;
- To ensure a site responsive approach to urban development that supports and enhances the context within which it is located, strengthens local character and identity, integrates with its context and promotes a sense of community;
- That mixed use centres are designed to encourage a broad mix of land uses that includes residential, commercial and office uses;
- To promote the upgrading of the quality and function of existing centres to support mixed uses, public transport, walkability, intensification, sense of community, amenity, and reduced car travel; and
- An appropriate amount and variety of medium density housing is provided in and around activity centres.

2.8 City of Cockburn Town Planning Scheme No. 3

The site is zoned 'Development' under the Scheme and is included within *Development Area 7* (DA 7) of the TPS. The Scheme outlines that a Structure Plan shall apply to the land within DA 7 in order to guide subdivision and development. The Structure Plan is to provide for an integrated town centre with a mix of residential, commercial, recreation, community and education facilities.

2.9 City of Cockburn Local Commercial Strategy

2.9.1 Adopted Local Commercial Strategy (2001)

In 2001 the City appointed Shrapnel Urban Planning to prepare a *Local Commercial Strategy* (LCS) for the district. The study was to identify current trends in retailing and recommend a retail hierarchy having regard to the future demographics of district and WAPC retail guidelines.

The report was completed in November 2001 and following consideration by the WAPC, was released for public comment in 2002. Submissions on the Strategy were considered by Council in November 2002 and forwarded to the WAPC for determination. The WAPC approved the Strategy in December 2006.

The LCS recognises that while the Coolbellup Town Centre is well used, it has a very poor appearance with little integration between buildings and tenancies. The LCS recognises the potential to upgrade the site, including maximising underutilised car parks and to provide Main Street (mixed use) design options throughout, particularly in the north and north-western parts of the centre.

2.9.2 Local Commercial and Activity Centres Strategy (December 2012)

The City of Cockburn's *Local Commercial and Activity Centres Strategy* (2012) (LCACS) implements the new direction for the planning of activity centres in Perth and Peel, set by the refreshed policy context outlined in *Directions 2031 and beyond* and *State Planning Policy No. 4.2 – Activities Centres for Perth and Peel*.

The LCACS is not a traditional Local Commercial Strategy, as it now provides shift towards evidence and performance based planning and with focus on commercial, industrial and specialised centres; this being a shift away from a traditional commercial focus and with retail floorspace caps.

Some key findings and recommendations of the LCACS relevant to the Coolbellup Town Centre include:

1. A 'performance assessment' of the existing Coolbellup Neighbourhood Centre identified that the centre has:

- *below average intensity* – relating to only 6.0 dwellings per gross hectare within the centres 200m catchment area; and a ratio of floorspace to total land area of only 0.17.
- *average diversity* – the type of land uses and services available within the Town Centre is considered satisfactory for a Neighbourhood Centre.
- *below average employment generation* – as a Neighbourhood Centre, it is not expected to accommodate any strategic employment base; notwithstanding there is room for improvement in terms of the existing (143 people) employment base at this Centre.
- *average urban form* – the site has good access to parks, playgrounds, outdoor recreation facilities and picnic facilities within and adjacent to the Centre. Footpath access is present, however continuity and physical restrictions are apparent, including busy road crossings and fencing.
- *below average economic activation* – the Centre consists of an enclosed mall, anchored by an IGA supermarket, the Coolbellup Public Library and the Coolbellup Hotel. Demand analysis suggests that the centre may be under trading indicating that the centre's economic purpose which prompted the original development may have changed. Furthermore the future vision/purpose for the centre is not identified.
- The centre, which is located in the middle of at grade parking, does not address the surrounding street network at all. The centre, like all mall based centres is selectively permeable, and while the mall itself is relatively easy to move through there are poor physical and visual connections between buildings and the streets, poor connections to the surrounding environment and the permeability of the centre is severely constrained outside of retail trading hours.

2. The existing and 15 year projected Activity Centre floorspace breakdown (guide) for Coolbellup consists of (but is not limited to):

Coolbellup Neighbourhood Centre – Floor Space (sqm)				
	2011	**2016**	**2021**	**2026**
Shop	2,235 – 3,725	2,603 – 4,338	2,844 – 4,739	2,957 – 4,928
Retail (other)	0	0	0	0
Office	109 – 181	130 – 217	147 – 245	153 – 255
Entertainment	225 – 374	272 – 453	305 – 508	317 – 529
Total	**2,568 – 4,280**	**3,005 – 5,008**	**3,295 – 5,492**	**3,427 – 5,712**

3 CONTEXT ANALYSIS

The site includes and is surrounded by a mix of land uses described in the following sections and illustrated in **Figure 4: Local Context Plan**.

3.1 Commercial Floorspace

According to the most recent data (2011) prepared by the City of Cockburn, the Structure Plan site has an existing commercial floorspace of approximately 7,455m^2 shared across 10 separate commercial buildings. Of this total area approximately 1,781m^2 of floorspace is currently vacant.

The shop/retail component of this commercial floorspace comprises approximately 2,936m^2.

3.2 Residential

Residential land uses generally surround the site, with varying densities and housing product found throughout. Whilst R20 (i.e. single residential) development is prevalent, pockets of medium and high density development (i.e. multiple dwellings up to R80) can also be found in the immediate locality.

An approved development to the south of the Structure Plan area, being the former Koorilla Primary School site, includes a mix of Aged Care and medium density single and grouped dwelling development, which will complement the Town Centre.

3.3 Open Space

Immediately to the east of the site is a large active public open space, being Len Packham Park. There are a number of other active parkland areas in close proximity to the site, including Tempest Park which also accommodates local amateur sporting clubs.

3.4 Activity Centres and Employment Centres

The site is located in context to the following regional activity centres and employment areas:

- Fremantle Strategic Metropolitan Centre
- Murdoch Specialised Centre
- Jandakot Airport Specialised Centre
- Cockburn Secondary Centre

At a more district and local level, the site is located in context to the following activity centres:

- Kardinya Park Centre
- Samson Centre
- Phoenix Centre
- Lakes Centre
- Leeming Forum

The Hamilton Commercial Centre (large Mixed Business and Industrial zoned area) is located south of the site on Phoenix Road. To the north of South Street, is the O'Connor Industrial Area and further north is the Myaree Industrial Area. West of the site is also the North Coogee Industrial Area.

LOCAL CONTEXT PLAN

Figure 4

NORTH

0 25 50 75m

Scale: 1:2500@A4 Date: 30/10/2015 Plan: CHOCO004b

Creative DESIGN+PLANNING

3.5 Education

A public primary school is located in the eastern portion of the subject site, this being the Coolbellup Community School. Samson Primary School is also located within 1km north of the site.

Hamilton Senior High School is approximately 1km west of the site, on the west side of Stock Road. North Lake Senior Campus high school is approximately 1km north of the site on Winterfold Road. Private colleges in Seton Catholic College and Winthrop/Somerville Baptist Colleges are located within 2km north-west and north-east of the site respectively.

Tertiary education facilities of Murdoch University and Challenger TAFE are located 2 kilometres north east of the suite on Murdoch Drive.

3.6 Movement Network

3.6.1 Neighbourhood Connector Roads

Coolbellup Avenue and Waverley Roads are the primary Neighbourhood Connector roads in Coolbellup, passing the Town Centre site enroute to the District and Regional Roads of Forrest, Winterfold and North Lake Roads.

Based on an October 2012 traffic count, Coolbellup Avenue generates approximately 4,100 vehicles per day (vpd) north of Waverley Road and approximately 5,000 vpd south of Waverley Road. Waverley Road generates 2,200 vpd during the same data period. Other approach roads including Counsel Avenue and Cordelia Avenue generate 3,000 vpd and 2,000 vpd respectively.

3.6.2 District & Regional Roads

District and Regional roads in the in close proximity to the site include Forrest, Winterfold, Stock and North Lake Roads. Stock and North Lakes Roads provide direct access to either South Street and/or Farrington Road, which provide direct access to the Kwinana Freeway further east.

Accordingly, the site is highly accessible to various major employment nodes via the district and regional road network.

3.6.3 Public Transport

Bus routes currently run on Coolbellup Avenue, Waverley Road and Cordelia Avenue. The site is very well connected to bus services including existing routes 940 and 513 which circumnavigate the site to the north and south. The site is also within reasonable proximity to the Murdoch and Cockburn Transit Stations on the Perth-Mandurah railway line. Bus services provide connection to this rail service in addition to park and ride facilities at the station.

3.6.4 Site Access and On-site Car Parking

Access into the site is currently via multiple entry points off Coolbellup Avenue, Waverley Road and Cordelia Avenue. Lot 2 includes a 6.5 metre wide right-of-carriageway across the rear of the lot in favour of the City of Cockburn. This right-of-carriageway enables vehicle access between parking areas on Lot 101 and the main shopping centre building on Lot 3. Lot 2 has a right-of-carriageway over Lot 101 of between 12.5 metres and 7 metres width for the full length of the northern boundary, and over Lot 3 with a width of 9.05 metres wide for 17.5 metres of the southern boundary from Coolbellup Avenue.

Reciprocal rights of parking and access is intended to be retained, albeit ultimate access and parking arrangements will be influenced by the final built form.

3.7 Existing Vegetation

The Town Centre includes a number of existing large trees namely on the perimeter of the site, being the western boundary (within the Coolbellup Avenue road reserve), and eastern boundary abutting Len Packham Reserve.

The Structure Plan identifies that the majority of trees will be retained, to maintain the aesthetic value and sense of place and identity of the Coolbellup Town Centre and surrounds. There are however some trees that are recommended for removal along the eastern boundary of the site. Such recommendations are further detailed under Section 4.9 and **Appendix 2** of this Structure Plan report.

3.8 Indigenous Heritage – Ceremonial Tree Site

Bordering the north-east boundary of the Structure Plan Area is a registered Aboriginal Heritage Site, this being Site ID 21787 – Coolbellup Wardang (Crow) Tree. Its precise location is in the north-western corner of Len Packham Reserve, on the western edge of the Primary School access road, and directly abutting the boundary with Lot 1; thus the subject tree is not within the Structure Plan boundary.

In February 2010, Brad Goode and Associates – Consulting Anthropologists and Archaeologists prepared Desktop Aboriginal Heritage Survey in relation to the Roe Highway Extension within the City of Cockburn.

This survey reported the Coolbellup Wardang (Crow) Tree to be a modified tree, ceremonial and mythological site. This site was initially recorded by James Corbett, Chairperson of Binjarb Aboriginal Corporation in 2004. The site comprises the remains of a jarrah tree (Eucalyptus marginata). The general area of Coolbellup is recognised as a place belonging to Wardang (crow). This tree was the largest among a cluster of tall jarrah and marri trees that were nesting grounds for the crow. They served as a conduit to channel the Wardang spiritual source between humans and birds. An informant, Mr Gus Abrahams (deceased) described the tree as scarred for ceremonies but due to fire the scars are no longer visible.

Although severely reduced by lopping to provide clearance to adjacent powerlines, the significance of the tree is important, thus retention is recommended. An existing Vegetation Assessment undertaken by EPCAD (**Appendix 2** refers) provides further detail in relation to the tree and measures required to protect the tree when the Coolbellup Hotel site is redeveloped.

The Aboriginal Heritage Act 1972 provides for the recognition, protection and preservation of Aboriginal sites in Western Australia. It is an offence under s.17 of the Aboriginal Heritage Act 1972 to excavate, destroy damage, conceal, or in any way alter an Aboriginal site. If an owner of land wishes to use their land in a manner which is likely to breach s. 17 with respect to any Aboriginal sites which might be on the land, they are able to apply for consent under s. 18(2) of the Aboriginal Heritage Act 1972. Consent has the effect of removing the criminality from any breach of s. 17 which occurs on the land.

3.9 European Heritage

There are no known European Heritage sites located within the Structure Plan area.

4 STRUCTURE PLAN DESIGN PRINCIPLES

It is the intent of the Coolbellup Town Centre Structure Plan (Structure Plan) to facilitate the revitalisation and ultimate redevelopment of the Coolbellup Town Centre into a successful neighbourhood activity centre; successful in that it becomes a visually appealing, vibrant and diverse place for living, working and visiting.

The Structure Plan is intended to guide land use and built form within the Town Centre by providing sufficient detail to ensure adequate control over development to achieve quality and desirable built form outcomes. The configuration of land uses and design parameters proposed by the Structure Plan have been nominated to maximise the chances of this intent being realised; whilst also retaining some flexibility so that the Structure Plan area can adapt to changing demands in development that may occur over time.

It is acknowledged that an alternative means of development control is required to provide the City of Cockburn and the community with certainty and confidence that the built form outcomes enunciated by the Structure Plan will be delivered in the most effective manner. In this regard, a detailed set of planning and built form standards and variations to the Residential Design Codes are included in *Part 1* of the Structure Plan, and explained under this Section. More specific guidance for each respective Precinct is detailed in Section Five.

4.1 Site Context

Physical and natural attributes define the character of an area. Given the existing dilapidated appearance of the Town Centre, and lack of established character in the surrounding spaces, it is important that the first stages of renovation and/or redevelopment provides a standard that will reflect the future desired character of this site and general locality.

Conceptual drawings prepared by Taylor Robinson for the proprietor of the Coolbellup Hotel site (Lot 1 Waverley Road, Coolbellup) reflects an improvement in building design appearance and specifications becoming more apparent in new development in the Coolbellup locality; this significantly improving upon the ongoing 'revitalisation program' of the various Department of Housing apartment complexes (mostly on-sold for private purchase) scattered throughout the locality. The higher standard of this newer development will encourage more investment in the locality, particularly the Town Centre and surrounding sites, which will be a significant benefit to the broader Coolbellup community in terms of local services and amenity.

4.2 Development Objectives

The following objectives have been prepared to guide development towards a quality land use and built form outcome:

- establish a sound statutory framework to progress planning and enable the development of a vibrant, sustainable Town Centre for the Coolbellup community;
- encourage a Town Centre that can develop over time and consist of retail, commercial, residential, community, educational and recreational land uses that complement each other and help create a 24/7 centre;
- encourage convenient links between uses to increase synergies and activity;
- encourage overlapping of land uses in the third dimension through combining more than one use in buildings;
- encourage various intensity of uses along streets;
- encourage an integrated plaza and landscaped urban settings that have various active frontages to deliver community place making spaces;
- provide for a safe, attractive and high quality public realm that caters for a wide range of uses from active recreation to informal, unplanned events and experiences;
- respond to the climate, environment, character and identity of the locality;
- respond to building diversity, choice, adaptability and innovation; and
- encourage a strong synergy between the Town Centre and adjoining residential, community and recreational places.

The Structure Plan report and accompanying (Plan 1) will ensure that:

- the design intent and overall vision of the Town Centre is implemented and maintained;
- overall constraints and opportunities have been fully considered and exploited;
- the built form and public realm complement one another;
- there is a considered outline for the overall role, function and character of the Town Centre;

- there is strong integration with the local site characteristics and community aspirations and needs;
- land uses are carefully considered and located to create strong relationships; and
- the promotion of the delivery of social, commercial and economic success for the Town Centre.

4.3 Land Use

The Structure Plan allows for a mix of land uses over the site and generally comprising high density residential, commercial (i.e. shop/retail and office) and community (civic) purposes.

The site has been divided into two (2) precincts and is proposed to consist of (without prejudice to any future development):

- **Precinct A** – Mixed Use (Local Centre) with Residential (High Density);
- **Precinct B** – Public Purposes.

These land use Precincts are described in detail in the Section 5 and notated in **Plan 1**.

4.4 Zoning and Land Use Permissibility

Pursuant to the City's Scheme, and for the purposes of planning and development control, standards and provisions, Precinct A shall be included in the 'Local Centre' zone of the Scheme's Zoning Table. This allows for residential and non-residential uses to be established in a manner consistent with the land use and development intent of the Scheme.

Precinct B shall be included in the 'Public Purpose – Primary School' and 'Public Purpose – Civic' reservation respectively; consistent with its current use. Any future development across these lots should be undertaken consistent with the prevailing land use.

The land uses permitted within each precinct are pursuant to those listed under the respective 'Local Centre' zone and 'Public Purpose' reservation in the Scheme.

4.5 Commercial Development

Pursuant to State Planning Policy 4.2 'Activity Centres for Perth and Peel' (August 2010), and City of Cockburn *Local Commercial and Activity Centres Strategy* (LCACS), the Coolbellup Town Site has a 'Neighbourhood Centre' designation. These Centres being characterised by 'providing for daily and weekly household shopping needs, community facilities and a small range of other convenience services.'

Neighbourhood Centres do not have a shop/retail floor space component 'cap', nor require a mix of land uses as a proportion of the Centre's total floor space. The Structure Plan does not prescribe minimum or maximum targets for floorspace throughout the Centre, however it recognises that based on the adopted Local Commercial Strategy and LCACS:

- available commercial floorspace is currently in the order of 7,500m2 shared across 10 separate commercial buildings (of which approximately 1,781m2 of this floorspace is currently vacant);
- the shop component of this commercial floorspace comprises approximately 2,936m2; and
- projected commercial floor space will be in the order of 3,427 – 5,712 by 2026.

A market analysis has been undertaken by the prospective major supermarket operator for Lot 1, identifying that there is significant potential to accommodate additional commercial floorspace to that identified in the LCACS (refer **Appendix 1**). There is currently no major full-line supermarket located in the 'main trade area' and the nearest Woolworths supermarkets are located more than 4 km away at Phoenix Shopping Centre and Melville. The 'main trade area' includes a primary sector and three secondary sectors, as follows:

- **primary sector** – generally bound by North Lake Road to the east, Phoenix Road to the south and Stock Road to the north, incorporating the suburb of Coolbellup;
- **secondary north sector** – straddles South Street and includes the suburb of Samson;
- **secondary east sector** – east of North Lake Road encompassing the suburb of North Lake;
- **secondary west sector** – extends to Carrington Street in the west and includes parts of the suburbs of Hilton and Hamilton Hill.

The market analysis identifies the population of the 'main trade area' is projected to increase to around 25,933 persons by 2026. Additional commercial floorspace, to that projected in the 2012 LCACS is now considered viable in this locality and will support the growing population.

The Structure Plan, through Scheme zoning and land use control, will allow for additional shop/retail floorspace to be provided throughout Precinct A. This will encourage street level activation along the Coolbellup Avenue frontage and proposed Main Street which transverses the central section of the precinct.

Future development is encouraged to provide a combination of land uses in addition to shop/retail, including office, entertainment, residential and other complementary uses; that provide for a high level of vibrancy, diversity and synergy throughout the Town Centre.

4.6 Residential Density

With the exception of the public purpose precinct (Precinct B) within which residential land uses are not permitted, the Structure Plan proposes a residential density coding of **R80** is applied to all residential development within the Structure Plan area.

All residential development must generally comply with the prescribed *Acceptable Development* provisions of the Residential Design Codes, unless otherwise varied by way of an approved Local Development Plan.

4.7 General Built Form & Development Principles

The Structure Plan encourages the implementation of a number of planning and design principles by way of redevelopment or building upgrades to ensure a vibrant, diverse and visually attractive town centre is ultimately achieved.

In light of the various individual strata ownerships across the southern portion of Precinct A, an extensive upgrade or redevelopment of this existing shopping centre building may be a complex challenge in the short to medium term; based on differing objectives and financial position of the various strata owners. Under these circumstances, an extensive upgrade of the existing shopping centre, to perhaps expand the floor space towards the property boundary, to provide street front activation, and to provide areas of roof top parking and the like to maximise space, may be too cost prohibitive at this time.

Notwithstanding the above, there are opportunities to undertake aesthetic upgrades to the shopping centre; which over time may attract more tenancies, increase the value of existing floor space and ultimately enable more significant upgrades or diversification to Mixed Use/Residential development and extensions to occur.

The built form and development principles included within this report provide a framework to achieve both short term 'aesthetic' upgrades as well as ultimate building form across the Structure Plan area. The design principles have been influenced by the WAPC's *Multi-Unit Housing Code* and other meritorious built-form design guidelines case studies found throughout the Perth Metropolitan Area. These general principles are summarised in the Table below and with the following section providing detailed explanation.

Table: Structure Plan Design Principles (Summary of Key Elements)

1. Frontage and Articulation **(Residential Development)**	2.1	Elevations to public streets (excluding laneways) and Public Open Space (POS) shall be considered as a primary frontage and designed as such.
	2.2	Blank walls to corner frontages are not permitted and, at minimum, require architectural features to address the public realm.
	2.3	Blank walls to internal side boundaries shall be limited and comply with Provision 8 below.
	2.4	Residential units facing a street, pedestrian access way (Corsos) or area of Public Open Space (POS) shall provide a habitable room interface, preferably a living space. Upper floor residential units are encouraged to provide a balcony space on this frontage.
	2.5	Where residential buildings abut a public street or Reserve, a nil setback may be provided subject to the design achieving streetscape objectives.
2. Frontage and Articulation **(Non-Residential Development)**	3.1	Non-residential uses shall generally provide building frontage to either the majority of the lot boundary facing the street or the nominated 'Important Interface', except for: a. entries, to allow for articulation of the façade provided that the majority of the building facade is maintained as above; and b. provision of one row (maximum) of short term visitor car parking bays; to assist in activating the relevant shop front.

	3.2	Clear glazing (minimum 75%) is required to retail and commercial tenancies at ground level. Exceptions may be considered to screen service areas, structural elements and the like.
	3.3	Glazing to retail and commercial tenancies along the ground level street and/or 'Important Interface' frontage shall have a head height of 3m to 3.6m high and finish to the underside of the awning. Sills are permitted to a maximum height of 500mm.
	3.4	Retail shop fronts shall typically be in the 6m-10m range for the majority. Shop fronts may exceed the above dimensional requirements if they are expressed as a series of shop fronts with multiple entry points and/or window displays that allow visual transparency to the shop beyond.
	3.5	Where a building is located with frontage to a nominated 'Important Interface', the design shall include the following: a. Pedestrian activated ground level; b. Articulated facades, including option for nil setbacks; and c. Pedestrian amenity, including footpath treatments and weather protection.
3. Public Realm	4.1	The north-south corsos, Main Street and Town Square will be subject to an easement in gross, required to be attached to any future Strata Plan to ensure the general public has legal access to these spaces at all times.
4. Robust Building Design	5.1	For ground floor residential development facing a public street, flexible building design is encouraged that enables the ground floor to be used for non-residential use at some stage in the future, hence: a. encouraging and allowing for adaptive re-use of buildings; and b. encouraging longevity in the design of buildings.
5. Awnings and Canopies	6.1	Continuous pedestrian cover is required for all future street frontage and 'Main Street' building designs. The pedestrian cover shall: a. provide shelter over building entries to define the entry; and b. be articulated (varied) in height and integral to the design and finish of the building.
	6.2	Any canopy or awning shall be a maximum of 3m depth, measured from the setback line, or 0.5 m from the kerb edge.
	6.3	An awning shall be within a minimum of 2.7m and a maximum of 3.6 m in height, measured from the pavement.
	6.4	Extension of the awnings and pedestrian cover is recommended over the nominated 'pedestrian hubs'; this to provide opportunity for sheltered alfresco or similar breakout areas.
6. Laneways	7.1	Development adjacent and over laneways shall have windows to commercial floor space, and habitable spaces to residential development, to encourage passive surveillance and engagement with the laneway.
7. Daylight Access and Shadowing	8.1	Daylight access is to be provided to all residential habitable rooms.
	8.2	Non-residential development shall be afforded as much natural ambient light to commercial and retail tenancies as possible, with the ability to manipulate the amount of daylight according to need.
8. Staged Development	9.1	Any nil setback to a side boundary, where adjoining development has not begun, shall be finished to match the main building or to provide visual interest (e.g. public art).
	9.2	Material changes, landscape and detail elements may be required where the overall height of the wall is considered excessive and detrimental to the overall development and/or the adjacent public realm.
9. Visual and Acoustic Privacy	10.1	The design of residential development shall provide a balance between visual privacy between dwellings without compromising outlook and views.
	10.2	The design of residential development shall provide appropriate building separation between and within sites to allow for adequate visual privacy to internal spaces.
	10.3	Noise generating uses should be in tenancies suitably designed and built, with the use managed to limit noise and disturbance to residential occupants in the same, or on adjoining development.

4.7.1 Building Scale

4.7.1.1 Building Size

Buildings should be designed so that the perceived bulk and scale promotes a new desired character for the Town Centre, including intensification of land uses preferably in the third dimension through combining more than one use in buildings. Notwithstanding, buildings should employ design treatments (i.e. articulation) that are architecturally designed to assist in reducing the appearance of bulk and scale on the local streetscape.

4.7.1.2 Building Height

Promoting consistency in building forms is important to reinforce the future desired character of the Town Centre. The distribution of building height within the Town Centre will influence people's perception of the streetscape and the general urban landscape. Sites on corners, landmark locations, or terminating vistas have the potential to accommodate additional height and will enhance the identity of the area.

Whilst multi-storey development is encouraged within the Town Centre, building height should have consideration towards the amenity impact on adjoining residential properties, including, where appropriate:

- adequate direct sun to buildings and outdoor living spaces;
- adequate daylight to major openings to habitable rooms;
- access to views of significance from public spaces;
- buildings present a human scale for pedestrians; and
- buildings facades are designed to reduce the perception of height through design measures.

4.7.1.3 Street Setbacks

Buildings are encouraged to provide minimal (nil) setbacks from street boundaries so they:

- promote a new desired character and intensification for the Town Centre;
- improve the functionality of the adjacent and internal street network; and
- provide shelter (awnings) for the local pedestrian network and ground floor uses.

4.7.1.4 Side & Rear Setbacks

The Town Centre currently has no residential land uses on site, therefore there are grounds to support nil side and rear setbacks along all internal boundaries. Notwithstanding, the design of boundary walls (parapets) should take in consideration:

- providing adequate daylight, direct sun and ventilation for existing buildings directly adjacent;
- moderating the visual impact on building bulk on a neighbouring property through appropriate stepping back of upper floors as required; and
- providing articulation in long walls by means of building materials, or feature walls that include elements of public art.

4.7.1.5 Site Cover

Site coverage will generally be controlled by plot ratio and car parking requirements. Intensification will be also supported by development that provides diversity in the third dimension through combining more than one use in buildings; and recognising that both suitable site coverage and building height provision assists to achieve this objective.

4.7.2 Streetscape

Streetscapes are created by the relationship between landscape and built form, often separating public from private domains. In order to enhance the streetscape, buildings should address the street and create a strong connection and relationship to the street. The interface between buildings and the streetscape should be designed and implemented with a consideration of public safety and passive surveillance.

The existing commercial buildings within the Town Centre currently have a poor relationship with the surrounding streetscape, separated by expansive car parking areas and with minimal shop front interface to the public realm.

The following design elements should be considered as part of any future development within the Town Centre to improve the current streetscape situation:

4.7.2.1 Public Realm Design

A key principle for implementation within the Town Centre is the activation of land uses and buildings at ground level. Activation relates to suitable physical and visual connections (actual and perceived) between individual buildings and the street/'Important Interface', and between common areas and the street/'Important Interface'.

To provide suitable activation, buildings should address the street and/or 'Important Interface' frontage to encourage pedestrian activity to interface or spill out onto the pavements and public spaces wherever possible. Also, development abutting or incorporating a pedestrian linkage should provide for visual surveillance from windows, balconies, entries and private open spaces.

To achieve a desirable public realm, the following design measures should be provided:

- orientate development to maximise street frontages for balconies, living areas and common areas;
- reduce the appearance of long blank walls on street frontages and nominated 'Important Interfaces';
- entries to buildings should be legible from the street and/or 'Important Interface';
- blank walls should be minimised at street level and where practical active frontages incorporated into the development to ensure a suitable level of casual surveillance of the public realm;
- lengths of street frontage at ground level dedicated to each tenancy should be limited to discourage large scale uses that reduce the level of activity along the building frontage;
- provision of suitable security design measures that maintain the integrity of the building design and streetscape aesthetics outside normal business hours.

The public realm of the north-south corsos, Main Street and Town Square is to be subject to an easement in gross, required to be attached to any future Strata Plan to ensure the general public has legal access to these spaces at all times.

4.7.2.2 Street Walls & Fences

Street walls and fences promote a sense of safety for pedestrians travelling along the street, and assist to define the property boundary and controls access for building occupants.

The proposed land uses within the Town Centre suggests that fencing will be limited. Notwithstanding this, where fencing is provided in the Town Centre it should generally meet the following objectives:

- fencing should be permeable to ensure an open streetscape character is maintained;
- fencing should allow for surveillance both internal and external to the site;
- fencing if provided to a raised section of a ground floor should be suitably set back or treated to minimise the bulk and scale of the building on the streetscape.

4.7.2.3 Laneways & Service Areas

Laneways and access to service areas are expected to be located:

- Along the eastern boundary of Precinct A (south of the proposed 'potential town square'); and
- Along the northern boundary of Precinct A (Waverley Road interface).

To provide a safe environment, development abutting laneways and access ways should provide a practical opportunity for passive surveillance overlooking the laneways. This may include provision of windows and openings to the rear of individual commercial tenancies, or upper floor balconies in the case of residential development.

The use of design to create an interesting experience (e.g. graphic art walls etc) is also encouraged.

4.7.2.4 Corsos

To enable physical connection for pedestrians throughout the site, a number of corsos (pedestrian access ways) are intended between or through buildings in the Town Centre. This may include pedestrian internal 'malls' within the existing shopping centre, or open air links between proposed and existing buildings.

The corsos will provide public pedestrian access via land in private ownership. It is anticipated that this will provide scope for unique and interesting designs, which will result in attractive outlooks for tenants and/or residents overlooking these areas, and for pedestrians using these connections. The corsos are required to be inviting and easily and clearly interpreted as being for use by the public.

As the Corsos will be in private ownership, development of these spaces within a three dimensional way is encouraged; utilising link buildings over the Corsos, stairs and ramps and the use of soft and hard landscaping to create intersecting spaces. Corsos should generally:

- provide for visual surveillance, perceived and real, from apartment windows and balconies, pedestrian entries and courtyards to apartments in the case of Mixed Use/Residential development;
- create an attractive and interesting pedestrian thoroughfare through the Town Centre;
- ensure they are inviting and easily and clearly interpreted as being for use by the public, including a high standard of lighting to the primary Corsos; and
- provide suitable protection to weather elements, namely sun, wind and rain.

4.7.3 Building Appearance

Buildings should be designed to enhance a desired streetscape by providing a range of buildings materials and articulation to enhance visual interest and to alleviate building bulk. Articulation may be in the form of projections, recesses, eaves overhangs, deep window reveals and variation in parapet walls heights and length.

Where mixed use development is proposed the proportion of the frontage dedicated to the residential entrance is to be minimised so as to maximise the potential for active commercial frontage. Suitable integration of land uses should also be considered to minimise conflict between uses.

The following design measures should be considered as part of any future development of the Town Centre site:

4.7.3.1 Robust Building Design

Robust and flexible building design allows for a change in use of a building over time, ensuring the building is sustainable via its longevity and adaptability. This is particularly relevant to residential buildings which should be designed to allow the ground floor to be adapted for a non-residential use.

In designing a robust residential building, consideration is to be given to future access to tenancies. Consideration should also be given to how internal layouts may be adapted for commercial/retail tenancies. The external appearance of the building should be designed as a commercial/retail tenancy rather than being domestic in appearance. This relates to the scale of windows and openings, materials selected and finish. High ceilings for commercial tenancies may allow for raised lightweight floors and raised courtyards for residential dwellings in the future.

4.7.3.2 Frontage and Articulation

Design and articulation at street level assists to provide a vibrant and stimulating pedestrian experience. At street level, the building frontage of commercial and retail tenancies should be designed to address the street and/or 'Important Interface' via suitable entries, windows and displays. Activation at street level may also be achieved by extending services beyond the site boundary; this may be through provision of alfresco seating or the display of goods that assist to populate the public realm.

Street-based retail and commercial tenancies are preferred to front Coolbellup Avenue, proposed Main Street, Cordelia Avenue and nominated 'Important Interface' areas.

Where residential uses front the street (ground or upper floors), living spaces should provide an address via generous windows, openings, balconies and courtyards to encourage active use within this zone and passive surveillance over the street. Street-based residential dwellings are preferred to front Coolbellup Avenue (upper floors), internal Corsos and overlook the Public Open Space to the east.

4.7.3.3 Awnings and Canopies

Awnings and canopies provide protection from sun, rain and wind, encourage pedestrian activity and create opportunities for extending retail activities to footpaths such as dining and vendor activities. They also create an intimacy of space. The design of the awning and canopy can provide identity and detail to a building. Awnings and canopies can be used to emphasise corners and define entry foyers to upper levels via accentuated height or a variation in design. High level awnings such as shading over windows are encouraged to add interest and expression to the building's architecture and improve its energy efficiency.

The Coolbellup Avenue frontage, and Cordelia Avenue side return, as well as the proposed Main Street and Town Square identified on the Structure Plan (Plan 1) are required to provide awnings and pedestrian cover at every possible opportunity. Extension of the awnings and pedestrian cover is recommended over the nominated 'pedestrian hubs'; this to provide opportunity for sheltered alfresco or similar breakout areas.

4.7.3.4 Entry

Building entries provide an interface within the public realm and generate activation, thereby contributing to the activation of the street. The entry point directs and orientates the visitor and can create desirable identity for a development; the entry is also the front door for many residential dwellings and therein the residents sense of place of address in the street. Entries may lead into a common entry foyer or directly into communal open space from the street.

4.7.3.5 Openings

The number, placement, proportion and detail of windows and openings can assist in articulating the facade and are important elements within the design. The use of shading devices such as eaves, awnings and external louvers can provide protection from the natural elements and provide definition to the building.

4.7.3.6 Corners

Corner buildings provide a transition between streets and define the public realm at intersections. The design of a building at the corners should be considered carefully to ensure there is continuity or harmony of materials and detailing to both elevations. The corner may be emphasised by variation in height and form, or feature elements such as wrapping balconies.

4.7.3.7 Lighting

Lighting of a building facade can enhance legibility and safety within the public realm. It can also create a mood and a sense of place. Lighting should be incorporated into the building design and consideration given to the building appearance at night. Particular emphasis should be given to lighting along the north-south aligned pedestrian link internal to the site.

4.7.3.8 Signage

Signage is important for way-finding and for business identification; its design should be considered early in the design process to ensure it is compatible with the building design and streetscape character. Signage design should consider scale and proportion of the development and information hierarchy within the street context without obscuring or dominating important views.

4.7.3.9 Staging & Interface

As it is likely that the redevelopment of the Town Centre will take place in stages, each (re)development should consider carefully its interface with future adjacent development. In each individual situation the issue of building setbacks and/or the use of architectural edges and wall treatment shall be explored and implemented to ensure that the interface is well planned and designed, and a superior outcome is achieved.

4.7.4 Site Planning & Building Design

The Town Centre site needs to accommodate all the functionality requirements to ensure that the amenity for residents and visitors is maximised by the provision of high quality facilities that are well located.

Open space provides area for functionality and outdoor amenity for users of multiple dwellings. The landscape treatment of open spaces such as those within the street setback areas is important in creating consistent and attractive communal streetscapes.

4.7.4.1 Outdoor Living Areas

Outdoor areas to residential land uses should be capable of use in conjunction with habitable rooms of each dwelling, and if possible, open to winter sun.

Private outdoor areas should be provided for each dwellings private use, which may be provided through ground level gardens, balconies or terraces that are connected to a habitable room. The size of private outdoor areas should be of sufficient size to serve as a functional space.

4.7.4.2 Visual Privacy

The Structure Plan has a firm objective to provide high density residential development. With this comes a level of acceptance that apartment style living will have a degree of overlooking between dwellings. The manner in which this is to be addressed will come down to built form design, with a balance of views and visual privacy to be considered by the developer. In this case internal layouts should consider the activities of each of the areas where overlooking may occur, the times and frequency these spaces are being used and the occupant's expectations of privacy and their ability to control a loss of privacy with screening devices.

The elevation and facade composition should not be compromised in achieving privacy between residential units, which should be achieved via a well considered building configuration and/or integrated screening devices.

4.7.4.3 Acoustic Privacy

It is acknowledged that the anticipated mixed use developments within Precinct A are likely to incur some noise generation conflicts from after hour activities. It is therefore imperative that suitable design parameters are addressed to ensure a high level of amenity is maintained for residential dwellings by protecting the acoustic privacy of dwellings from noise-generating non residential uses.

Noise generating uses should be in tenancies suitably designed and built, with the use managed to limit noise and disturbance to residential occupants in the same, or an adjoining development.

4.7.4.4 Daylight Access & Lighting

Natural light within the building contributes to pleasant and comfortable environments in which to live and work. Access to natural light reduces reliance on artificial light, improving energy efficiency and amenity. Passive and active design principles are encouraged to minimise the need for artificial summer cooling and winter warming. North-facing living spaces should be encouraged.

As lighting creates a sense of safety for users and for residents alike, the location of lighting should be carefully considered in areas which are proposed to be used after dark. Particular emphasis should be given to the primary Corsos nominated on the Structure Plan (Plan 1).

4.7.4.5 Dwelling Diversity

The Structure Plan requires that all development involving residential land uses must incorporate a diversity of dwelling types with regard to number of bedrooms and dwelling sizes. The specific requirements in relation to dwelling diversity are generally pursuant to the WAPC's *Residential Design Codes* and accompanying *Multi-Unit Housing Code*. The following provisions apply to the Structure Plan area:

Developments comprising more than 12 dwellings shall contain a mix of at least two different dwelling types (as listed below):

A development shall provide diversity in unit types and sizes as follows:

- Single bedroom dwellings – minimum 20% and maximum 50% for any proposed development;
- Dwellings of 2 or more bedrooms – minimum 40% for any proposed development.
- The development does not contain any dwellings smaller than 40sqm plot ratio area, excluding outdoor living areas and external storage.

4.8 Movement Network

4.8.1 Vehicles

The aim of the Structure Plan is to create a Town Centre with pedestrian focus. Accordingly, vehicle access and movement has been designed to only that necessary to obtain access to the key areas and car parking sites.

The internal vehicle movement network is based on one southeast-west primary access way ('Main Street'); and a number of secondary access ways providing adequate vehicle access and communal car parking areas. The internal road network will provide direct access to all car parking areas, however without creating an environment dominated by vehicle movements.

4.8.2 Pedestrians

A primary objective of the Structure Plan is to create a network of clearly defined pedestrian linkages both internal to the Town Centre and on-route to the broader neighbourhood path network. The Structure Plan proposes two key north-south pedestrian axes and two east-west pedestrian axes that have been located and designed as convenient links between spaces and uses to increase synergies and activity between the Town Centre and adjoining residential, community and recreational places.

The proposed pedestrian linkages create a connected and highly accessible Town Centre that is well integrated with the surrounding environment.

4.8.3 Car Parking

The Structure Plan provides for various forms of car parking across the site appropriate to the projected land uses. The car parking areas vary between grade parking within the site, parallel on-street visitor car parking along Coolbellup Avenue and Waverley Road and under croft parking for residential and commercial uses where practical and appropriate. Car parking areas also provide an important service delivery function for the retail and commercial operators within the Structure Plan area.

Parallel on street parking is suggested along the perimeter public roads, to provide additional visitor parking opportunities; namely for those developments with prescribed external building interface to the surrounding road network. This relates primarily to Lots 101 and 2, which are proposed to include developments with direct frontage to Coolbellup Avenue. Longer term developments may see extension of the core shopping centre building or Mixed Use/Residential towards the perimeter roads and the need to incorporate on-street car parking for Lot 3.

On-street car parking bays along Coolbellup Avenue are considered vital for catching passing trade and ensuring the success of the proposed 'active street frontages' in this location. There is ample room for on-street parking within the Coolbellup Road reserve given the wide landscaped verge on the Town Centre side. The intermittent spacing of bays is possible without compromising the established trees within this verge.

Coolbellup Avenue currently generates in the order of 4,200 vehicles per day (vpd) with ultimate traffic forecasts in the order of 5,500 vpd. By metropolitan comparisons, Mends Street in South Perth generates up to 4,600vpd, Rokeby Road in Subiaco up to 13,500vpd, and Albany Highway in Victoria Park up to 19,000 vpd. All of these case studies provide on-street parallel parking the full length of their respective commercial strips. In light of the comparatively low traffic volumes along Coolbellup Avenue, slow speed residential environment, potential traffic calming measures including suggested raised 'flush' paving areas, and with wide (2.5 metres) parallel parking bays encouraged, there will be negligible vehicle-pedestrian conflicts under this suggested parking arrangement.

In addition to on-street parking, internal private roads preferably with one-way traffic movements are also encouraged to be provided directly in front of the buildings fronting Coolbellup Avenue; hence offering a greater level of short term parking and activation in front of these external facing Coolbellup Avenue 'shop-fronts'. Provision of such parking arrangements will be subject to more detailed design at the Development Application stage.

4.8.4 Reciprocal Rights of Access

There will be reciprocal vehicle access and car parking between all shop/retail sites, consistent with current arrangements. The level of reciprocal parking and access available will be influenced by the ultimate built form and car parking and access configuration, and may require amendment to Certificate of Titles at the Development Application stage.

4.9 Open Space & Landscaping

A Vegetation Assessment has been undertaken by EPCAD for Lots 1, 101 (on site and adjacent verges) and part of Lot 3 (eastern boundary); **Appendix 2** refers. Additional studies will be required for the remainder of Lot 3 and Lot 2 including adjacent verges should verge car parking be considered at the time of (re)development.

The Structure Plan identifies a number of mature trees (that must be retained) within the wide verge fronting Coolbellup Avenue. It is considered that these trees add aesthetic value and contribute significantly to the sense of place and identity of the Coolbellup Town Centre and surrounds.

A detailed tree survey will need to be undertaken at the Development Application stage in order to achieve the practical retention of trees, should car parking or road access be required through or adjacent to the verges. Upgrading of the Coolbellup Avenue verge, and other perimeter road verges will be encouraged as part of any future development.

There are a number of large trees of varying quality along the eastern (rear) boundary of Lots 1, 101 and 3 (Precinct A). As identified by the Vegetation Assessment, the various (17) River Gum specimens adjacent the Lot 1 and 101 eastern boundary have all been severely pruned over the years with the canopies arising from lopped unions ranging from 4m to 10m above ground level.

Existing Vegetation – Coolbellup Avenue

For this reason the Vegetation Report recommended removal of the trees and replacement with suitable specimens where appropriate. Removal of the majority of the trees has already been undertaken. Retention of a ceremonial tree (Aboriginal Heritage Site) is recommended for retention as addressed under Section 3.8.

Further south adjacent Lot 3, the existing Sugar Gum specimens are of good quality and recommended for retention subject to a suitable design of the adjacent road network.

All trees internal to the above lots, including Flame Trees and Central Gum tree are of poor quality and best replaced with suitable specimens where appropriate. Based on the Vegetation Assessment, the removal of the compromised trees should be supported if it is identified that retention will jeopardise the upgrade and redevelopment of the Town Centre; particularly when suitable replanting 'offsets' can be provided, both on-site (between buildings) and off-site (Coolbellup Avenue and Waverley Road verge upgrade, and additional planting within the adjacent parkland.)

The Structure Plan proposes urban infill development in an established area with sufficient public open space provision. Liveable Neighbourhoods applies to greenfield and large urban infill structure planning and does not apply to small scale urban infill. Therefore, Liveable Neighbourhoods is not referenced in the Structure Plan. The Structure Plan does not create additional public open space, but does create new privately owned and managed public realm areas. The design and location of which is outlined below and in the Structure Plan (Plan 1).

The Structure Plan provides for pedestrian linkages, public gathering spaces and meeting places to be established through the ultimate redevelopment of the Town Centre. The landscaping treatment of these spaces is anticipated to be a mix of hard and soft elements appropriate to the purpose and function of the space, its synergies with built form, and land uses adjacent. Development will need to ensure landscaping of the pedestrian linkages and public spaces contributes to a highly desirable and visually attractive pedestrian experience.

Water Sensitive Design Principles will be adopted with the use of selective native shrub planting. The shrub planting will further enhance the fringe landscape buffer and formalise pedestrian routes whilst creating a habitat for local birds.

4.10 Public Art

The Structure Plan design objectives will promote high quality built form and landscaping treatments internal and external to the site that will contribute significantly to a 'revitalised' identity for the Coolbellup community.

Community identity by way of a commissioned Public Art piece may also be explored, with the Town Square the most logical space in which to locate this art. This matter would need to be explored at the time of refurbishment or redevelopment of Precinct A to include the Town Square.

5 PRECINCTS

The site has been divided into two (2) precincts and proposed to generally consist of:

- **Precinct A** – Mixed Use (Local Centre) with Residential (High Density) encouraged;
- **Precinct B** – Public Purposes.

Site specific design requirements have been identified for each Precinct and include as follows:

5.1 Precinct A – Mixed Use

This Precinct includes Parent Lots 1, 2, 3 and 101 – being the western portion of the Structure Plan area; with Coolbellup Avenue and Waverley Road bordering the western and northern boundaries respectively.

5.1.1 Land Use Intent

Precinct A is intended to be a mixed use zone with a range of residential and retail/commercial uses, including an anchor supermarket. The retail and commercial activities will be developed at ground floor levels with high density residential (multiple dwellings) above. Some standalone high density residential development may also be developed in various locations within the Precinct.

The inclusion of high density residential within a Town Centre is a desired planning and design outcome; as it is widely recognised having people live within the activity centre is essential for creating diversity, vitality and vibrancy, activation beyond traditional working hours and ultimately contributes to the economic success of the Town Centre.

It is envisaged that the commercial tenancies will vary along the north-south transect of the Structure Plan. In the northern section commercial tenancies may include an anchor supermarket, cafes, restaurants, offices (medical, Real Estate, tax accountants etc), specialty shops (retail) and consulting rooms or similar with a focus on addressing the 'Pedestrian Hub'.

The central section of the Precinct is envisaged to include entertainment, offices, shops, liquor and consulting rooms focussing on activating the Town Square.

The southern section of the Precinct includes the existing Coolbellup Shopping Centre buildings. Extending from this, this section of the Precinct may include specialty shops and other shop/retail, office, entertainment, consulting rooms and any other land uses complementary to a Neighbourhood Centre. With the introduction of a full-line supermarket in the northern portion of Precinct A, the southern portion of Precinct A may ultimately attract a Mixed Use/Residential component as the 'Shop/Retail' retail focus shifts north overtime.

The development of Corsos between buildings, street and parkland interface, as well as undercroft parking will be encouraged throughout the Precinct. This will foster increased activity, connectivity and linkages throughout the Structure Plan area.

5.1.1 Main Street

The Structure Plan (Plan 1) nominates a Main Street which transverses the central portion of Precinct A in a south easterly alignment. The proposed Main Street borders Lots 101 and 2, continues into the north eastern corner of Lot 3 and then links to Cordelia Avenue and beyond to the south. The Main Street will be the primary vehicular and pedestrian access point with connections to the core retail area. The following Main Street design principles should be applied as part of any future development:

- A vibrant mix of complementary (high frequency of patronage) land uses fronting the Main Street;
- Pedestrian scale development, awnings, canopies and landscaping;
- Providing for pedestrian priority movement;
- A walkable thoroughfare designed for pedestrian priority over vehicles;
- Road design to facilitate slow vehicle speeds and clearly marked pedestrian crossings;

- Formal and informal gathering and meeting places and spaces;
- Design outcomes that encourage activities to spill outdoors onto the footpath and public spaces;
- Compact and intense development style; and
- Highly visible building entries and external tenancies to clearly address the street.

5.1.2 Town Square

The provision of a Town Square is proposed by the Structure Plan; this site located centrally within Precinct A, adjoining the Main Street, thus connecting the northern and southern portions of the site. This location is the most logical position given it is a natural meeting place and pedestrian 'intersection' at the main entry point into the existing shopping centre and the intended first stages of future redevelopment in Precinct A.

A significant public space could be developed here that will contribute considerably to community place making and the development of a strong sense of place for the Coolbellup Town Centre. Design parameters important to the success of the Town Square include:

- Anchoring off a landmark building or building entrance;
- Providing an attractive urban landscape, possibly with a key landscape or art feature to clearly define the Town Square;
- Provision of comfortable and diverse seating, in both formal and informal arrangements, with adequate shade;
- Providing for pedestrian priority movement;
- Connection (physical and visual) with the immediately adjacent development and buildings; and
- Avoiding the creation of 'unsafe' areas by facilitating passive surveillance opportunities wherever possible (i.e. shop front windows, alfresco areas looking onto the public space).

Town Square and Main Street Example – Waterford Plaza, Karawara

5.1.3 Movement Network

The Structure Plan builds on existing networks to maintain access to Coolbellup Avenue while providing vehicle connections to the south and onto Cordelia Avenue.

The primary access way will traverse Precinct A in a south easterly direction along the boundaries of Lots 101 and 2 and into Lots 3. This access way will provide a Main Street and Town Square and will promote a pedestrian focussed 'meeting place' environment that is clearly delineated by means of alternative paving materials, hard and soft landscaping and raised sections, to emphasise pedestrians having right of way over vehicles.

The north-south aligned internal pedestrian network will complement the existing network along Coolbellup Avenue and directs pedestrians to the proposed Town Square, and main entry of the core retail area.

Vehicle access into the southern section of Precinct A will ultimately be limited to two locations; a primary internal access way off Coolbellup Avenue (Main Street), and a secondary access way off Cordelia Avenue – providing access to a southern car park area and circulation around the eastern edge of the site. These two access ways will provide adequate connection with the car parking areas whilst providing links to the Town Square.

Primary vehicle access into the northern portion of Precinct A will be provided via an easterly extension of Counsel Avenue. The design treatment of this 4-way intersection on Coolbellup Avenue is likely to be a roundabout. However, the ultimate design is subject to further liaison with the Council in terms proposed dwelling and commercial traffic volumes at the Development Application stage. Additional opportunities for access into the northern portion of Precinct A could be obtained off Waverley Road.

Refuse vehicles servicing the northern portion of Precinct A may potentially be provided a one-way movement off Waverley Road. This will remove the need for refuse vehicle turning areas that unnecessarily take up a large area of land to the detriment of the ultimate built form design.

A centralised north-south aligned vehicle thoroughfare through Precinct A, connecting Waverly Road with the southern sections of the Precinct, is not warranted given the pedestrian focus proposed for this Precinct.

Pedestrian Access

Three key pedestrian links are proposed within the Precinct A area. The western link relates to the existing wide landscaped verge pertaining to Coolbellup Avenue. The upgrade of the verge is anticipated as part of future development of the adjacent site, including potential path upgrade, tree and shrub planting to complement the established vegetation. This will enhance the local streetscape and provide an attractive vista for the future commercial and residential development adjacent.

In addition to the pedestrian linkage along the Coolbellup Road frontage, a central north-south and an east-west pedestrian linkage are proposed. The north-south pedestrian link will extend from the proposed Pedestrian Hub through to Cordelia Avenue. The southern portion of this link will be through the existing shopping complex. The east-west link will run parallel to the proposed east-west private access road and link Coolbellup Avenue with the recreational facilities and Primary School to the east. This will be developed using 'Main Street' design principles.

Delineation of pathways is encouraged, by means of alternative paving materials, hard and soft landscaping and raised sections, to emphasise pedestrians having right of way over vehicles.

The proposed east-west and north south internal pedestrian links will create opportunity for both commercial and residential interface to these areas, encouraging activity and vibrancy via external through traffic as well as resident and commercial use and interaction in such spaces.

General guidance and objectives on suitable built form development of these links (Corsos) is addressed under Section 4.

5.1.4 Pedestrian Hub

The suggested north-south and east-west aligned pedestrian links between building cells provides opportunity for a centrally located pedestrian 'hub' in the northern section of Precinct A. The pedestrian hub will complement and provide direct connection to the proposed 'Town Square'. The hub will generally be surrounded by mixed use and residential development.

5.1.5 Car Parking

Car parking is proposed to consist primarily of 'at grade' parking across the Precinct. Existing car parking areas are encouraged to be upgraded and reconfigured to emphasise pedestrian links and to maximise the potential number of car bays on site. A secondary access way and verge parking is encouraged parallel to Coolbellup Avenue to promote activation of shop fronts within this location.

The option of rooftop parking is also suggested should expansion of the existing core building be significant enough to encompass a large portion of the existing parking areas. This will need to be reviewed with the prescribed 'car bays to floor space ratio' assessment undertaken as part of any future Development Application over the site.

5.2 Precinct B – Public Purpose

5.2.1 Land Use Intent

This precinct incorporates the existing public primary school on Lot 301 and the existing library and community facilities on Lot 300. The Structure Plan proposes that these uses, as currently developed, continue within this precinct.

The Civic site has capacity to accommodate additional land uses, which may include community facilities such as a Child Care Centre. The potential relocation of the existing Child Care Centre from Precinct A to this site would enable the commercial floorspace to expand west; hence improving the building interface and consequently the activation of the surrounding pedestrian and road networks.

To improve the interface of the Town Centre with the commercial facilities, any future development on the Civic sites is encouraged to provide frontage to both the street and Core retail area. This however is subject to some built form and landscaping design challenges, notably the difference in ground levels between the two Precincts.

5.2.2 Movement Network and Car Parking

The Structure Plan maintains the existing vehicle access and car parking arrangements for these sites via Waverley Road and Cordelia Avenue. Stronger pedestrian linkages are encouraged between the community facilities and Town Centre, particularly along the proposed 'Main Street' in Precinct B and primary east-west pedestrian corridor in Precinct A. Encouraging use of these pedestrian corridors will promote improved surveillance and hence safety for school children on route to and from the community facilities, as well as assisting to further activate the Town Square, intersecting pedestrian links and adjoining land uses.

6 IMPLEMENTATION AND STAGING

There is no specific staging required for the Town Centre site. This is by virtue of all development on individual landholdings within the Town Centre able to be undertaken without prejudicing or restricting development of an adjoining site. Notwithstanding the above, the development proposals for each respective landholding will need to be mindful of the existing built form, in terms of boundary walls or proximity of building envelopes, and parking and access arrangements between developments.

Redevelopment of the Coolbellup Hotel site (Lot 1) is anticipated to be the first project to proceed on the site. A Development Application for proposed Mixed Use (Commercial/Retail) development at Lot 1 Waverley Road, Coolbellup has already been approved. However, the owners of Lot 1 are in the preliminary stages of entering into a contract with a major supermarket operator which will require a new Development Application to be lodged to facilitate the delivery of Mixed Use development, incorporating commercial uses (full-line supermarket, specialty retail etc) and high density residential. This 'Variation 1' version of the Structure Plan will enable the new Development Application to proceed for Lot 1.

As intimated, built form across the Town Centre may occur over an extended period of time. It is important to consider how blank walls in staged developments are presented and viewed from the public realm and neighbouring development. Careful consideration of setbacks, articulation and appearance of facades in the early stages is required. The use of landscaping and public art can assist with the presentation between developed and undeveloped sites internal to the Town Centre.

It is anticipated that mixed use/residential redevelopment of the Coolbellup Hotel site will generate significant interest in the local area, and will assist in promoting the upgrade, expansion or redevelopment of adjacent landholdings to the south. This will ultimately help to create an integrated Town Centre with a vibrant and sustainable mix of commercial, residential, recreation, civic and education facilities for the benefit of the broader Coolbellup community.

APPENDICES

Appendix 1
Location IQ
Preliminary Woolworths Assessment

LOCATIQN

Coolbellup, Perth

Preliminary Woolworths Assessment

Prepared for Woolworths Limited

January 2013

KEY FINDINGS

Location & Composition

1. The suburb of Coolbellup falls within the City of Cockburn Local Government Area (LGA) and is located approximately 15 km to the south of the Perth Central Business District (CBD).

2. Woolworths are currently considering a new supermarket at a site on the south-eastern corner of the intersection of Coolbellup Avenue and Waverley Road. Coolbellup Avenue is a major north-south road that links to Winterfold Road in the north and Forrest Road in the south.

3. The Woolworths supermarket is assumed to be 3,200 sq.m (including liquor) in size, with the development assumed to offer a high degree of customer amenity with excellent accessibility and a good provision of convenient car parking.

Main Trade Area

4. The defined main trade area for the proposed Woolworths supermarket at Coolbellup includes a primary sector and three secondary sectors as follows (refer Maps 1 and 2):

   — The **primary sector** is generally bounded by North Lake Road to the east, Phoenix Road to the south and Stock Road to the north. This sector incorporates the suburb of Coolbellup.

   — The **secondary north sector** straddles South Street and includes the suburb of Samson.

   — The **secondary east sector** is provided to the east of North Lake Road encompassing the suburb of North Lake.

   — The **secondary west sector** extends to Carrington Street in the west and includes part of the suburbs of Hilton and Hamilton Hill.

5. Table 1 details the population levels in the main trade area by sector over the period to 2026. In 2011, the main trade area population is estimated at 24,133, including 9,315 persons in the key primary sector.

6. The main trade area population is projected to increase to around 25,933 persons by 2026, representing an average annual growth rate of around 0.6%, or 155 persons.

7. Three former primary school sites in Coolbellup (primary sector) are to be redeveloped by LandCorp and Lend Lease. These sites are as follows:

   - The Primary is the first site to be development and is located between Hargreaves Road, Hillory Street and Ebert Street. A total of 58 single housing lots and up to 33 apartments/townhouses are to be provided with land clearing underway. All lots have been sold with first residents expected in late 2013.

   - At the former Koorilla primary school site on the south-eastern corner of Coolbellup Avenue and Cordelia Avenue, an aged care facility is to be built which will contain some 100 beds.

   - At the former North Lake primary school site at Montague Way and Capulet Street some 77 residential lots and units are planned. The former North Lake and Koorilla school sites are still in development with work to start concurrently in the next 12-18 months.

Competition

8. Currently within the defined main trade area, supermarkets are as follows:

   — Immediately adjacent to the proposed site at the north-eastern intersection of Coolbellup Road and Cordelia Avenue is the Coolbellup Shopping Centre. This small convenience centre is anchored by an IGA supermarket of around 1,100 sq.m.

— In the secondary west sector, Hamilton Hill Shopping Centre on Simms Road is based on an IGA supermarket of 920 sq.m and there is also a Supa IGA supermarket on South Street at Hilton (2,150 sq.m) and a small IGA X-Press foodstore at Hamilton Hill (200 sq.m).

9. Beyond the defined main trade area, the nearest supermarkets are provided at the following locations:

— Kardinya Park Shopping Centre is located 2.4 km to the north-east of the proposed site and is anchored by a Kmart discount department store, a Coles supermarket (2,411 sq.m) and a provision of specialty shops. A development application for the expansion of Kmart and Coles at this centre was approved in late 2009 with a two year period to start construction. This application lapsed in late 2011 and no further development applications have been applied for to date. On this basis, an expansion of Coles at Kardinya Park Shopping Centre has not been assumed for the purposes of this assessment.

— Adjacent to Kardinya Park Shopping Centre, on the northern side of South Street, is a Supa IGA supermarket (approximately 2,500 sq.m).

— The Lakes Shopping Centre is located 3.8 km to the south of Coolbellup and is based on a Coles supermarket and a provision of specialty shops. Coles is around 2,500 sq.m in size.

— Woolworths at Melville is located at the high profile intersection of the Leach Highway and Stock Road. Woolworths is 4,373 sq.m in size.

— Phoenix Park Shopping Centre is situated 4.3 km to the south-west of the Coolbellup site and is based on a Big W discount department store and Woolworths (3,814 sq.m) and Coles (3,024 sq.m) supermarkets.

10. There is solid potential for the proposed Woolworths supermarket at Coolbellup, reflecting the following:

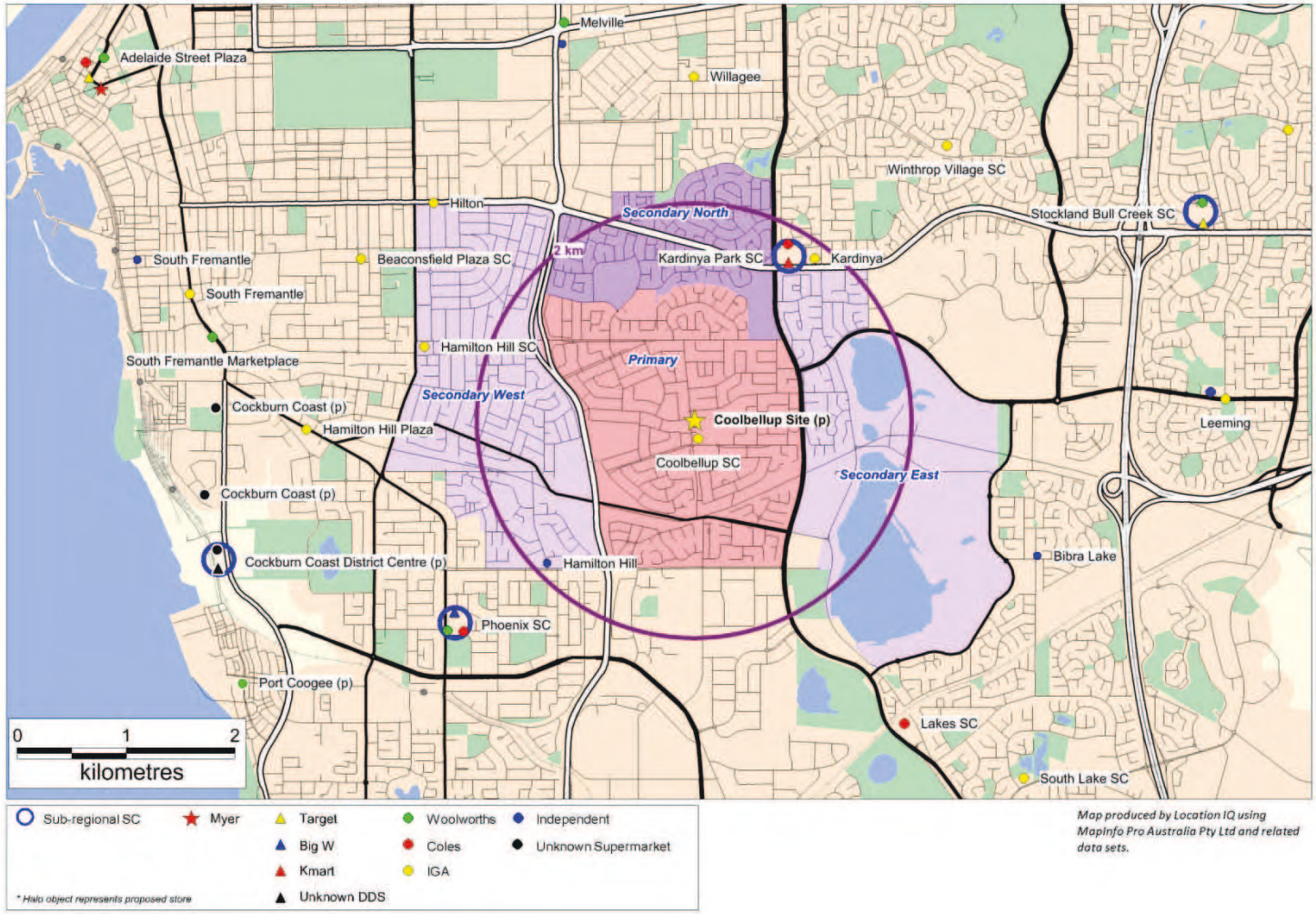
— The size of the main trade area catchment at around 24,133 persons including 9,315 persons in the primary sector.

— The location of existing supermarkets in the surrounding area. There is currently no major full-line supermarket provided in the main trade area.

— The nearest Woolworths supermarkets are located more than 4 km away at Phoenix Shopping Centre and Melville.

MAPS AND TABLES

MAP 1 – WOOLWORTHS COOLBELLUP MAIN TRADE AREA AND COMPETITION



MAP 2 – WOOLWORTHS COOLBELLUP MAIN TRADE AREA AND COMPETITION

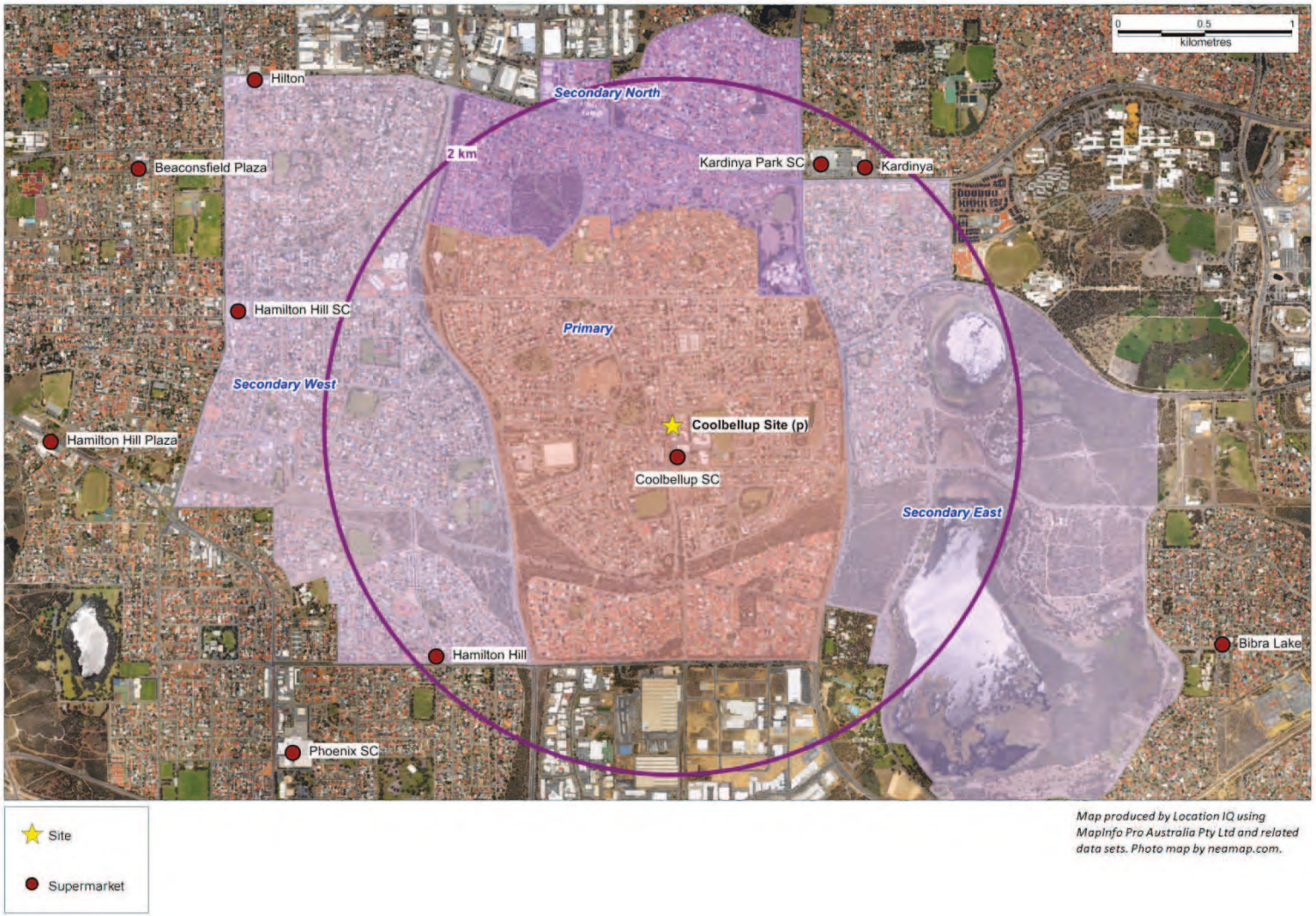


TABLE 1 – WOOLWORTHS COOLBELLUP MTA POPULATION, 2006 – 2026

Trade Area Sector	Estimated Resident Population 2006	2011	Forecast Population 2013	2016	2021	2026
Primary Sector	9,160	9,315	9,395	9,605	9,955	10,055
Secondary Sectors						
• North	4,110	3,946	3,946	3,946	3,996	4,046
• East	2,280	2,339	2,379	2,439	2,539	2,589
• West	7,500	8,533	8,793	9,093	9,343	9,593
Total Secondary	13,890	14,818	15,118	15,478	15,878	16,228
Main Trade Area	**23,050**	**24,133**	**24,513**	**25,083**	**25,833**	**26,283**

	Average Annual Change (No.) 2006-2011	2011-2013	2013-2016	2016-2021	2021-2026
Primary Sector	31	40	70	70	20
Secondary Sectors					
• North	-33	0	0	10	10
• East	12	20	20	20	10
• West	207	130	100	50	50
Total Secondary	186	150	120	80	70
Main Trade Area	**217**	**190**	**190**	**150**	**90**

	Average Annual Change (%) 2006-2011	2011-2013	2013-2016	2016-2021	2021-2026
Primary Sector	0.3%	0.4%	0.7%	0.7%	0.2%
Secondary Sectors					
• North	-0.8%	0.0%	0.0%	0.3%	0.2%
• East	0.5%	0.9%	0.8%	0.8%	0.4%
• West	2.6%	1.5%	1.1%	0.5%	0.5%
Total Secondary	1.3%	1.0%	0.8%	0.5%	0.4%
Main Trade Area	**0.9%**	**0.8%**	**0.8%**	**0.6%**	**0.3%**
Australian Average	*1.5%*	*1.5%*	*1.4%*	*1.3%*	*1.2%*

All figures as at June
All figures are based on 2011 SA1 boundary definition with the exception of 2006 which is based on 2006 CCD boundary definition. 2006 and 2011 ERP is calculated using 2011 enumeration factor.
Sources : ABS; Western Australian Planning Commission; Forecast.id

Location IQ
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Appendix 2
EPCAD
Vegetation Assessment Report
Lots 1, 101 and Part Lot 3

EPCAD

COOLBELLUP HOTEL REDEVELOPMENT

Existing Vegetation Assessment

Image: Zuideveld Marchant Hur Architects

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PREPARED FOR DEVELOPMENT PLANNING STRATEGIES

PREPARED BY EPCAD

July 2012

CONTENTS

1.0 INTRODUCTION

This report has been prepared to provide an overview of the proposed landscape design and incorporation of existing vegetation as part of the Coolbellup Hotel Redevelopment.

EPCAD in conjunction with Arborcentre undertook a site and data assessment of the existing vegetation throughout Lot 1 Waverley Road (the proposed development site) with the aim of retaining existing vegetation within the proposed development where possible.

Appendix 1 discusses specific trees considered worthwhile for retention. Measured data, specifications and comments made during the site investigation for each tree or significant grouping of plants is provided. Recommendations and measures for protection of trees proposed to be retained are provided.

2.0 LANDSCAPE PLAN

Key features of the proposed landscape design include a 'green fringe' surrounding the development along the North, East and Western boundaries of the site. Also, a North-South pedestrian boulevard and East-West shared use corridor separate the four main buildings that comprise the development proposal.

The densely planted fringe surrounding the site forms a landscape buffer between the proposed development and existing residences along Coolbellup Avenue and Waverley Road. The fringe design incorporates existing trees throughout a wide grassed verge along Coolbellup Avenue, a row of Sugar Gums (Eucalyptus cladocalyx) to the South-East corner of the site and selected specimen trees along the Waverley Road boundary which includes a historic Jarrah (Eucalyptus marginata) specimen of cultural significance (Ref: Coolbellup Wardang (crow) tree (Site ID 21787) on DIA website). Existing trees will be supplemented with additional native trees to give structure and formality to the overall fringe planting design.

Water Sensitive Design Principles will be adopted with the use of selective native shrub planting. The shrub planting will further enhance the fringe landscape buffer and formalise pedestrian routes whilst creating a habitat for local birds.

The central pedestrian boulevard is a key feature within the proposed development. The boulevard provides a pedestrian link through the site as well as a shared space for residents to enjoy. Raised grass platforms with specimen trees are terraced along the boulevard, creating a series of attractive and welcoming spaces. The specimen trees will provide summer shade and reinforce the lineal landscape within the development area.

Artists impression of pedestrian boulevard looking north

Legend

- Existing Trees
- Proposed Trees
- Feature Paving
- Shrubs
- Turf Lawn
- Decorative Gravel

1. Central pedestrian boulevard
2. Central ‘car crossing’, gives priority to pedestrians
3. Raised and terraced grassed platforms, create a range of spaces along the boulevard for gathering, sitting and playing
4. Feature paving
5. Decorative crushed gravel surfacing enhances the residential character and provides spaces for informal bocce/petanque games
6. Decorative gravel below balcony’s
7. Shrub planting creates a green ‘setting’ for the new buildings
8. Fixed hammocks provide an attractive feature to lure residents out into the shared space
9. Bike Rack
10. ‘Sculptural’ Seating provides an element of interest, creating a more vibrant public realm
11. Services exit with retaining walls
12. Bollards
13. Cafe/bar alfresco

0 5 10 15 30M

Coolbellup Hotel Redevelopment

Landscape Concept Plan 1:250 @ A1

APRIL 2012

EPCAD

3.0 SPECIES SELECTION

A combination of native and introduced species has been considered within specific areas of the development.

The selected species will complement the existing vegetation to be retained, provide shelter, summer shade and enhance the streetscape and the proposed development.

TABLE 1: Recommended Tree Species

Botanical Name	Common Name	Native/Exotic	Location
Agonis flexuosa	Peppermint Tree	Native	All
Angophora costata	Smooth Bark Apple	Native	Fringe
Brachychiton acerifolius	Illawarra flame	Native	All
Callistemon spp.	Bottlebrush	Native	All
Corymbia ficifolia	Red Flowering Gum	Native	Fringe
Erythrina indica	Flame tree	Exotic	Pedestrian Boulevard
Eucalyptus caesia	Silver Princess	Native	Pedestrian Boulevard
Eucalyptus leucoxylon "Rosea"	Red Flowering Yellow Gum	Native	Fringe
Eucalyptus sideoxylon "Rosea"	Red Ironbark	Native	Fringe
Jacaranda mimosaefolia	Jacaranda	Exotic	Pedestrian Boulevard
Melaleuca quinquinervia	Broad Leafed Paperbark	Native	Fringe
Platanus orientalis digitata	Cut Leaf Plane Tree	Exotic	Pedestrian Boulevard
Plumeria spp.	Frangipani	Exotic	Pedestrian Boulevard
Ulmus parvifolia.	Chinese Elm	Exotic	Pedestrian Boulevard
Xanthorroea preissii	Grass Tree	Native	Pedestrian Boulevard

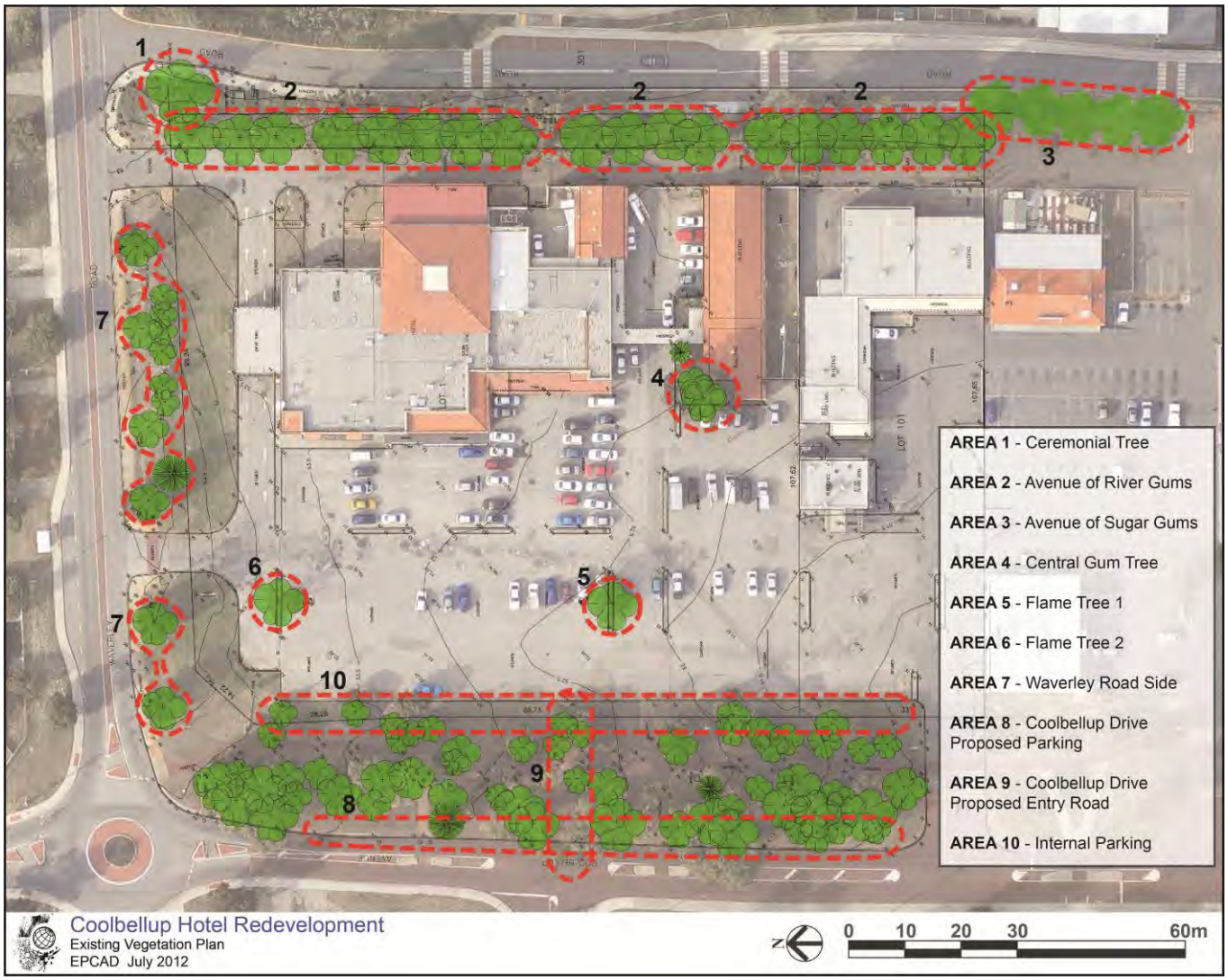
APPENDIX 1: TREE ASSESSMENT REPORT

PURPOSE OF REPORT:

To provide an overview of worthwhile trees on the Coolbellup Hotel site in light of the proposed development and recommendations for their retention on site.

Map 1

Existing Vegetation Plan



AREA 1: Ceremonial Tree (NE corner)

Image: Ceremonial Tree

Common Name: Jarrah

Species: Eucalyptus marginata

Estimated Size: 8m in height x 5m spread

DBH (Diameter Breast Height): 1.2m

Bole (Footprint): 2.1m diameter

Tree Health: Poor

Tree Structure: Severely compromised

Site Inspection: 3rd July 2012

Comments

- ≠ Recognised as a 'Ceremonial Tree'
- ≠ The specimen has been radically reduced by lopping to provide clearance to adjacent power lines (HV & LV on both its Western and Northern sides).
- ≠ The regrowth has superficial attachment that will require on-going foliage load management to ensure tree safety.
- ≠ The tree's root zone are has been compromised as a result of soil level changes and excavations in proximity to the tree over many decades.
- ≠ Retention of the tree as a worthwhile living specimen will require the establishment of a Tree Preservation Zone (TPZ), and the management of activities within the TPZ throughout the site development phases **(Refer Attachment 1. – Tree Preservation of the 'Ceremonial Tree').**

AREA 2: Avenue of 17 x River Gums (Eastern Boundary)

Species: Eucalyptus camaldulensis x

Estimated Size: 24m in height x 15m spread

DBH (Diameter Breast Height): 850mm (average)

Bole (Footprint): 1m diameter

Tree Health: Average

Tree Structure: Compromised

Site Inspection: 3rd July 2012

Image: Avenue of River Gums looking South

AREA 2: Avenue of 17 x River Gums (Eastern Boundary) - continued

Comments

The avenue of trees have all been severely pruned over the years with the canopies arising from lopped unions ranging from 4m to 10m above ground level.

The trunks of all but 2 of the trees are located on the proposed building alignment and will not survive the development.

The ninth and tenth specimens from the Waverley Rd end, are located either side of a proposed driveway. The proximity of the trees to excavations that will be required to match up with road levels will likely destabilise the trees as well as challenge their capacity to cope with the inevitable root loss. These specimens have grown reliant on the neighbouring trees for wind protection; their retention without the protection afforded by the neighbouring trees would present inherent structural issues that would require ongoing management. Replacing these trees with new plantings would result in a better outcome.

Image: Two River Gums specimens located either side of proposed driveway

Image: Avenue of River Gums looking North

AREA 3: Sugar Gums at the Southern end of the Avenue of 17 x River Gums

Species: Eucalyptus cladocalyx

Comments

The re-working of the service road that passes by these Sugar gums will require further arboricultural input as part of the road design drawings so that the undulations adjacent the trees are addressed without compromising the trees and that the potential for future road disturbance is ameliorated.

Image: Avenue of Sugar Gums

AREA 4: Central Gum Tree

Species: Eucalyptus camaldulensis x

Estimated Size: 23m in height x 20m spread

DBH (Diameter Breast Height): Multiple stems 200mm to 300mm arising off old stump (Coppice)

Bole (Footprint): 1.7m diameter

Tree Health: Average

Tree Structure: Compromised

Site Inspection: 3rd July 2012

Comments

Being coppice regrowth, the tree presents a safety risk that will likely be exacerbated by unavoidable root loss caused by the proposal to contain this specimen within a new planting bed in association with the footprint of the new building. Replanting with a new specimen would achieve a better outcome for the development.

Image: Central Gum Tree

AREA 5: Flame Tree 1

Species: Erythrina indica x

Estimated Size: 8m in height x 10m spread

DBH (Diameter Breast Height): 800mm at 500mm above ground

Bole (Footprint): 1m diameter

Tree Health: Poor

Tree Structure: Compromised

Site Inspection: 3rd July 2012

Comments

There is potential for this tree to be kept within the proposed new driveway; subject to finished levels and road construction criteria. However, it is not a good specimen of the species and is in poor condition.

Image: Flame Tree 1

AREA 6: Flame Tree 2

Species: Erythrina indica x

Estimated Size: 7m in height x 8m spread

DBH (Diameter Breast Height): 700mm at 500mm above ground

Bole (Footprint): 800mm diameter

Tree Health: Poor

Tree Structure: Severely Compromised

Site Inspection: 3rd July 2012

Comments

A very poor specimen of the species that is structurally compromised by past topping and not worth transplanting. Its survival in this environmental extreme is testament to the species resilience.

Image: Flame Tree 2

AREA 7: Waverley Road Side

The proposal to incorporate the 4 x Angophora costata's into a car bay sized nib and install a footpath on the other side of the trees (as indicated in red) will likely see the trees die within a few years or at best, cause them to underperform and become a blight on the streetscape.

Given the maturity of these 4 Angophora's it will be necessary to increase the nib size to at least 2 car bays (preferably 3) and divert the footpath to provide a minimum 1.5m radius between the edge of foot path and the tree trunk. Further, there will need to be a root pruning protocol and a watering regime to coincide with the works being done. Additional arboricultural input required for this to be incorporated into the construction details once the final levels have been determined for the road/parking design.

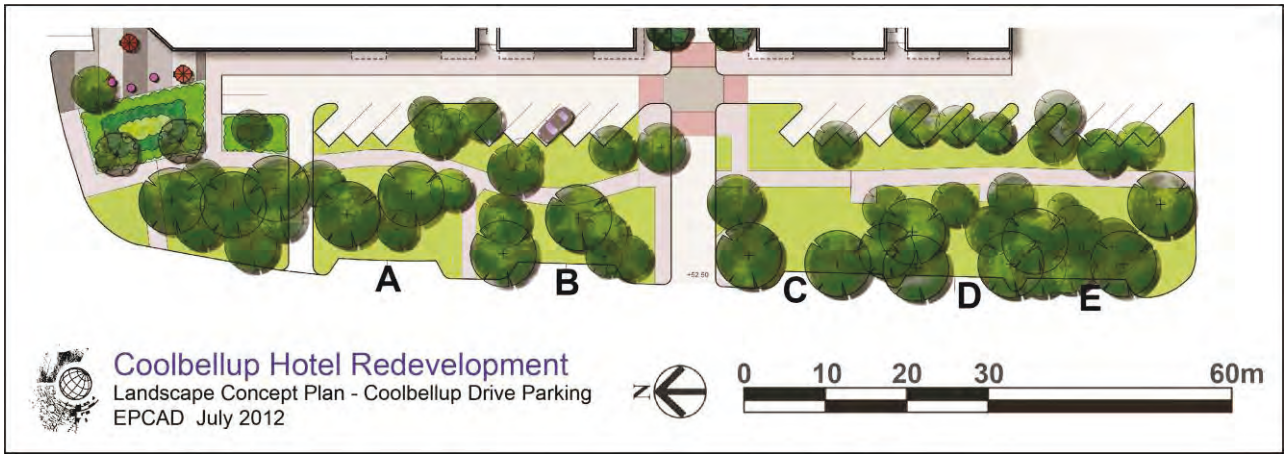
Comments

- ≠ Similar consideration will need to be afforded the Rottnest Island Pine (Calitris preissii).
- ≠ The Angophora that is second from the East end is in very poor condition and is not worthwhile retaining. Better to replace it with a new specimen.

Image: Waverley Road verge looking West.
Note: Footpath and nib outline indicative only.

Image: Waverley Road verge looking East with Rottnest Island Pine (*Calistris preissii* in foreground)

AREA 8: Coolbellup Drive – Proposed Parking



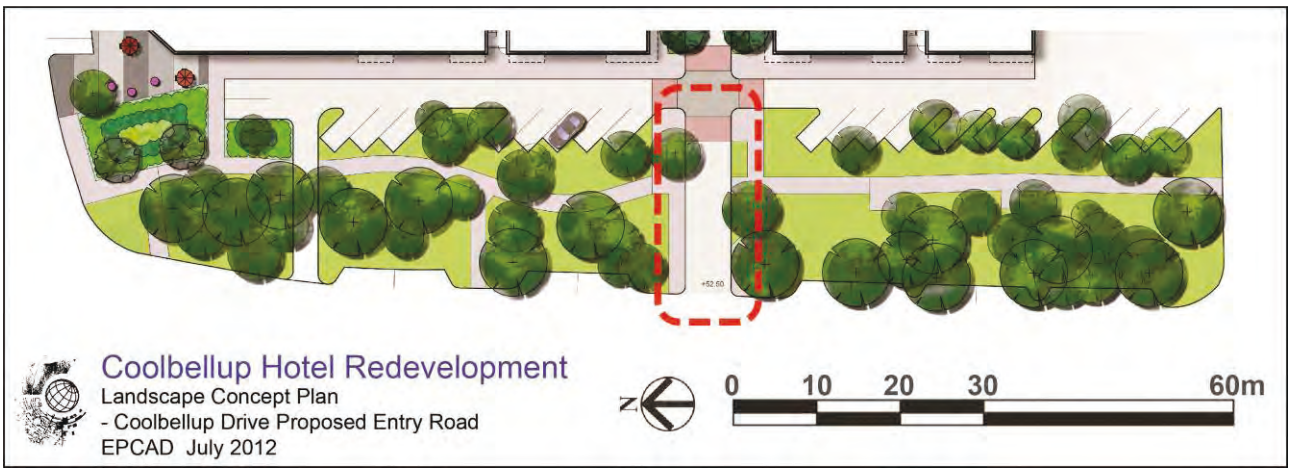
Parking bays A – E will require root pruning to precede any boxing out for the construction of the bays and a tree watering regime implemented as directed by the Arboriculturist. Suggest that such detail is incorporated into the specification documentation.

Comments

- ≠ All of the trees are in reasonable health and appear to be structurally typical for the species.
- ≠ Re-routing of the main path and the introduction of new footpaths will also require root pruning operations to precede any boxing out works for the construction of the paths and a tree watering regime implemented as directed by the Arboriculturist.

Image: Coolbellup Drive looking South.

AREA 9: Coolbellup Drive – New Entry Road

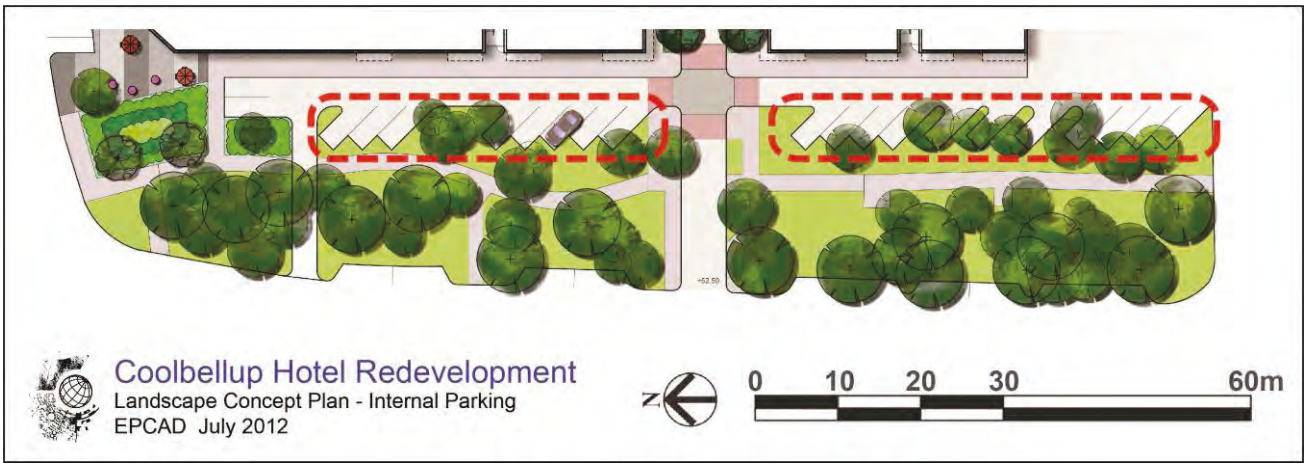


Retaining the two Eucalypts either side of the new entry road will require tree specific tree preservation measures as directed by the Arboriculturist. This will include:

- ≠ Canopy pruning,
- ≠ Root pruning,
- ≠ Watering regime,
- ≠ Tree protection measures.

Image: Looking West from Proposed Entry off Coolbellup Drive.

AREA 10: Coolbellup Drive – Parking on East Side of Verge



This strip of low growing trees are largely made up of Rottnest Island Tea Tree (Melaleuca lanceolata), some Callistomens (Callistomen viminalis) and a few Kunzeas (Kunzea spp.), that are in reasonable condition and structurally typical for the species.

A re-configuration of the parking bays would eliminate the loss of some of the more worthwhile specimens.

The retention of worthwhile specimens will require tree specific tree preservation measures being applied as directed by the Arboriculturist. This will include:

- ≠ Canopy pruning,
- ≠ Root pruning,
- ≠ Watering regime,
- ≠ Tree protection measures.

Images: Looking South along Coolbellup Drive Verge

SUMMARY OF RECOMMENDATIONS

AREA 1: Ceremonial Tree (NE corner)

- Tree to be retained.
- Tree Preservation as per Attachment 1.
- Arboriculturist to be appointed to monitor activities.

AREA 2: Avenue of 17 x River Gums (Eastern Boundary)

- Removal of all trees.
- Replanting of suitable specimens where appropriate.

AREA 3: Sugar Gums at the Southern end of the Avenue of 17 x River Gums

- Trees to be retained.
- Further Arboricultural input into the service road design drawings so that the undulations adjacent the trees are addressed without compromising the trees and the potential for future road disturbance is ameliorated.

AREA 4: Central Gum Tree

- Removal of the tree.

AREA 5: Flame Tree 1

- Poor specimen however, there is potential to retain the tree in-situ.
- Retention subject to finished levels and the practicalities associated with road and pavement construction.

AREA 6: Flame Tree 2

- Removal of the tree.

AREA 7: Waverley Road Side

- 4 of the five Angophoras are worthwhile retaining however additional space around the trees is required for this to be successfully achieved (increase the nib size to at least 2

car bays (preferably 3) and divert the footpath to provide a minimum 1.5m radius between the edge of foot path and the tree trunk).

- 1 x Calitris will require similar consideration
- Further arboricultural input into the final alignments of parking bays and footpaths will be required.
- Tree preservation measures to include timely Root pruning, Canopy pruning, Watering regimes and Tree protection measures.
- Tree preservation specifications to be incorporated in the construction documentation.

AREA 8: Coolbellup Drive – Proposed Parking

- Construction detail to include the engagement of the Arboriculturist to perform &/or oversee tree preservation activities including timely root pruning, canopy pruning, watering regimes and tree protection measures.
- Tree preservation specifications to be incorporated in the construction documentation.

AREA 9: Coolbellup Drive – Proposed Entry Road

- Construction detail to include the engagement of the Arboriculturist to perform &/or oversee tree preservation activities including timely root pruning, canopy pruning, watering regimes and tree protection measures.
- Tree preservation specifications to be incorporated in the construction documentation.

AREA 10: Internal Parking – East Side of Coolbellup Drive Verge

- Construction detail to include the engagement of the Arboriculturist to perform &/or oversee tree preservation activities including timely Root pruning, Canopy pruning, Watering regimes and Tree protection measures.
- Tree preservation specifications to be incorporated in the construction documentation.

GENERAL

Appoint a certified Arboriculturist to prepare a “Tree Preservation Management Plan”.

ATTACHMENT 1: Tree Preservation of 'Ceremonial Tree'

LEGEND

- EXTENT OF FOLIAGE
- PROPOSED BUILDING FOOTPRINT
- AS4970 - 2009 TREE PRESERVATION ZONE (REFER TO ATTACHMENT 2)
- RECOMMENDED TREE PRESERVATION ZONE FOR CONSTRUCTION

Note: Proposed building encroaches into both TPZ's.

Further assessment of proposed works and methodologies will be required so that appropriate measures can be taken to offset their potential impact on the tree.

Coolbellup Hotel Redevelopment
Tree Preservation of 'Ceremonial Tree'
EPCAD, July 2012

N 0 10 20 30 60m

COMMENTS

1. **The area shaded red is to be treated as the Tree Preservation Zone (TPZ)**

The implications for this are as follows:

- The area is cordoned off with construction type panel fencing and labelled “TREE PRESERVATION ZONE - DO NOT ENTER WITHOUT AUTHORISATION”.
- No open trench excavation is to occur within this zone without further arboricultural input. (Note: All new below ground services (or upgrades), to be installed via boring at min 800mm depth where possible &/or measures taken to offset the potential impact of works within the Recommended Tree Preservation Zone).
- No soil level changes to occur without approval by the Arboriculturist.
- The area is to be weed controlled and mulched as directed by the Arboriculturist.
- A watering regime will form part of the remediation works that are to be identified by the Arboriculturist.
- Selective canopy pruning under the supervision of the Arboriculturist.
- All new or remediation works to footpaths, kerbs or roads to be approved by the Arboriculturist prior to commencement.

2. **The TPZ Requirements and Site Inductions**

a) The TPZ requirements are to for part of the site induction process for all people, contactors and sub-contractors that are engaged to carry out works on the project.

b) A competent Arboriculturist is to be appointed to manage the implementation of the TPZ.

ATTACHMENT 2

Refer Extract from AS 4970 – 2009

STANDARDS AUSTRALIA
Australian Standard
Protection of trees on development sites
S E C T I O N 1 S C O P E A N D G E N E R A L
1.1 SCOPE
This Standard provides guidance on the principles for protecting trees on land subject to development. It follows, in sequence, the stages of development from planning to implementation.
This Standard aims to assist those concerned with trees in relation to development. Where development is to occur, the Standard provides guidance on how to decide which trees are appropriate for retention, and on the means of protecting those trees during construction work. It does not argue for or against development, or for the removal or retention of trees nor does it consider the monetary value of trees. The Standard does not apply to the establishment of new trees.
1.2 APPLICATION
This Standard gives guidance to horticulturists, arborists, architects, builders, engineers, land managers, landscape architects, contractors, planners, determining authorities, building surveyors, certifiers, those concerned with the care and protection of trees, and all others involved in the management of trees and development.
Extract from This Standard provides guidance for arborists, architects, builders, engineers, Land managers, landscape architects and contractors, planners, building surveyors, those concerned with the care and protection of trees, and all others interested in integration between trees and construction.

Appendix 3
GTA Consultants
Structure Plan Transport Assessment

GTAconsultants

Coolbellup Tavern Redevelopment
Proposed Mixed-Use Development
Structure Plan Transport Assessment

draft

Client // Urban Capital Group
Office // WA
Reference // 16P1024000
Date // 04/11/15

Coolbellup Tavern Redevelopment

Proposed Mixed-Use Development

Structure Plan Transport Assessment

Issue: A-Dr 04/11/15

Client: Urban Capital Group
Reference: 16P1024000
GTA Consultants Office: WA

Quality Record

Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
A-Dr	04/11/15	Draft	Lucas Stewart	Mark Fowler	Tanya Moran	

GTAconsultants
Melbourne | Sydney | Brisbane
Canberra | Adelaide | Perth
Gold Coast | Townsville

DRAFT

Table of Contents

Appendices

Figures

Tables

1. Introduction

1.1 Background & Proposal

A Local Structure Plan is to be lodged with the City of Cockburn for a proposed mixed-use development on the former Coolbellup Tavern site at the corner of Waverley Road and Coolbellup Avenue, Coolbellup. The planning proposal incorporates some 3,000 sq.m of supermarket nett leasable floor area, 640 sq.m of specialty retail nett leasable floor area, and 61 residential apartments.

An approved Development Application exists over the site for the construction of approximately 140 residential apartments. This proposal is no longer being pursued and GTA Consultants (GTA) has been commissioned by the new Applicant to prepare a high level Transport Assessment (TA) for structure planning purposes for the new planning proposal. In this respect, whilst this TA considers the proposal in the appropriate level of detail, it should be considered as an Addendum to the previously prepared planning application for the residential development.

1.2 Purpose of this Report

This report sets out an assessment of the anticipated transport implications of the proposal, including consideration of the following:

i Existing traffic conditions proximate to the site
ii Suitability of the proposed parking provision within the site
iii A high level assessment of the adequacy of the proposed layout
iv The traffic generating characteristics of the proposal
v The anticipated impact of the proposal on the surrounding road network.

1.3 References

In preparing this report, reference has been made to the following:

- an inspection of the site undertaken by GTA on 29 October 2015
- City of Cockburn *Town Planning Scheme* (updated 4 September 2015)
- *Coolbellup Town Centre Structure Plan* (last amended 5 November 2012)
- the Western Australian Planning Commission (WAPC) *Transport Assessment Guidelines for Developments*, dated August 2006
- WAPC *Residential Design Codes* (R-Codes), last amended 23 October 2015
- *Australian / New Zealand Standard for Off-Street Car Parking* (AS/NZS 2890.1: 2004)
- traffic count data provided by Surveytech
- plans for the proposal prepared by Taylor Robinson as provided at Appendix A
- other documents as referenced in this report.

2. Existing Situation

2.1 Existing Site and Land Uses

The subject site, as shown in Figure 2.1, is located at 1 Waverley Road (on the corner of Coolbellup Avenue), Coolbellup. The site of some 1.53 hectares has frontages of approximately 100m to Waverley Road and 85m to Coolbellup Avenue. As noted earlier, the site was formerly occupied by the Coolbellup Tavern, though is now currently vacant.

Figure 2.1: Subject Site and its Environs

(Map / Image Reproduced Courtesy of Google Maps)

The land immediately to the north and west of the subject site is primarily residential. The land immediately to the east is Coolbellup Community School and its associated open space (Len Packham Reserve and Coolbellup Skate Park). The land immediately to the south are various retail uses which form part of the overall Coolbellup Shopping Centre precinct.

2.2 Existing Road Network

2.2.1 Waverley Road

Waverley Road is a City of Cockburn road and is classified as a Local Distributor in the Main Roads Western Australia (MRWA) road hierarchy. It is a two-lane, two-way painted median-divided road aligned in an east-west direction, with a 9m wide carriageway set within a 30m wide road reserve. A posted speed limit of 50km/h applies to Waverley Road, reducing to 40km/h during school times at the site frontage.

2.2.2 Coolbellup Avenue

Coolbellup Avenue is a City of Cockburn road and is classified as a Local Distributor in the MRWA road hierarchy. It is a two-lane, two-way painted median-divided road aligned in a north-south direction, with a 10m wide carriageway set within a 40m wide road reserve. A speed limit of 50km/h applies to Coolbellup Avenue in the vicinity of the site.

2.2.3 Counsel Road

Counsel Road is a City of Cockburn road and is classified as a Local Distributor in the MRWA road hierarchy. It is a two-lane, two-way road aligned in an east-west direction, with a 9m wide carriageway set within a 30m road reserve. A speed limit of 50km/h applies to Counsel Road.

2.2.4 Cordelia Avenue

Cordelia Avenue is a City of Cockburn road and is classified as an Access Road in the MRWA road hierarchy. East of Coolbellup Avenue, it is an undivided two-lane, two-way road aligned in an east-west direction, with an 8.5m wide carriageway set within a 20m road reserve. West of Coolbellup Avenue, it is a divided two-lane, two-way road with two 6m wide carriageways set within a 30m wide road reserve.

A speed limit of 50km/h applies to Cordelia Avenue, reducing to 40km/h during school times east of Coolbellup Avenue.

2.3 Existing Traffic Volumes

For the purposes of providing a robust traffic assessment for the next stages of planning, GTA commissioned recent turning movement counts at the following locations:

- Coolbellup Avenue / Waverley Road
- Coolbellup Avenue / Counsel Road
- Coolbellup Avenue / Cordelia Avenue.

These counts were undertaken during the following periods:

- Saturday 24 October 2015 from 10:30am to 12:30pm
- Thursday 29 October 2015 from 3:00pm to 5:00pm.

These period were initially discussed with the City of Cockburn[1] as being appropriate for the purposes of this TA.

The observed volumes during these peak hours are shown in Figure 2.2 and Figure 2.3. These turning movement counts identified the following peak hours:

- Coolbellup Avenue / Waverley Road
  - Saturday Peak: 11:30am to 12:30pm
  - Thursday Peak: 3:15pm to 4:15pm
- Coolbellup Avenue / Counsel Road
  - Saturday Peak: 11:30am to 12:30pm
  - Thursday Peak: 3:15pm to 4:15pm

[1] Phone discussion between John McDonald (Transport Engineer) of City of Cockburn and Tanya Moran of GTA on Thursday 22 October 2015.

- Coolbellup Avenue / Cordelia Avenue
  - Saturday Peak: 11:30am to 12:30pm
  - Thursday Peak: 3:00pm to 4:00pm.

Figure 2.2: Existing (2015) Saturday Midday Peak Hour Traffic Movements

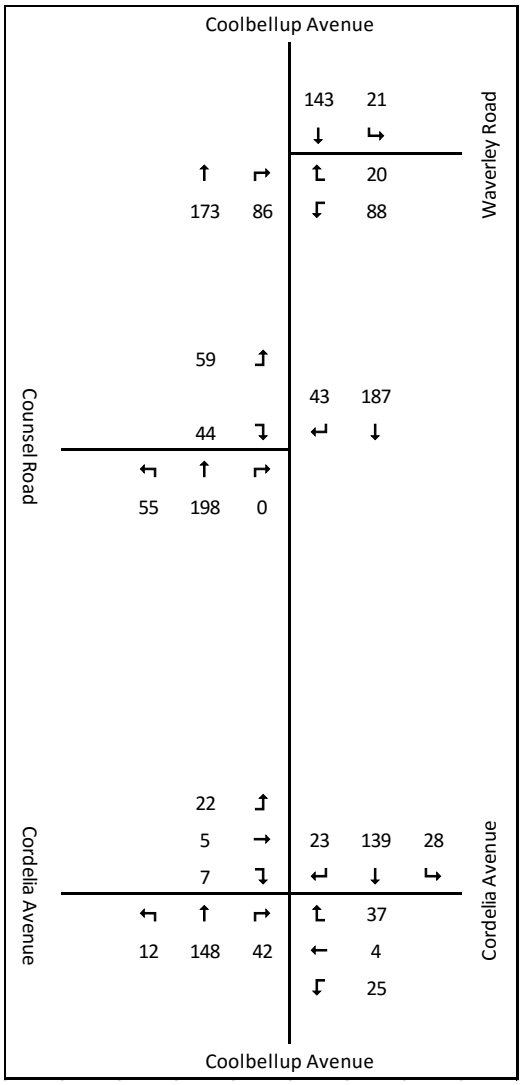
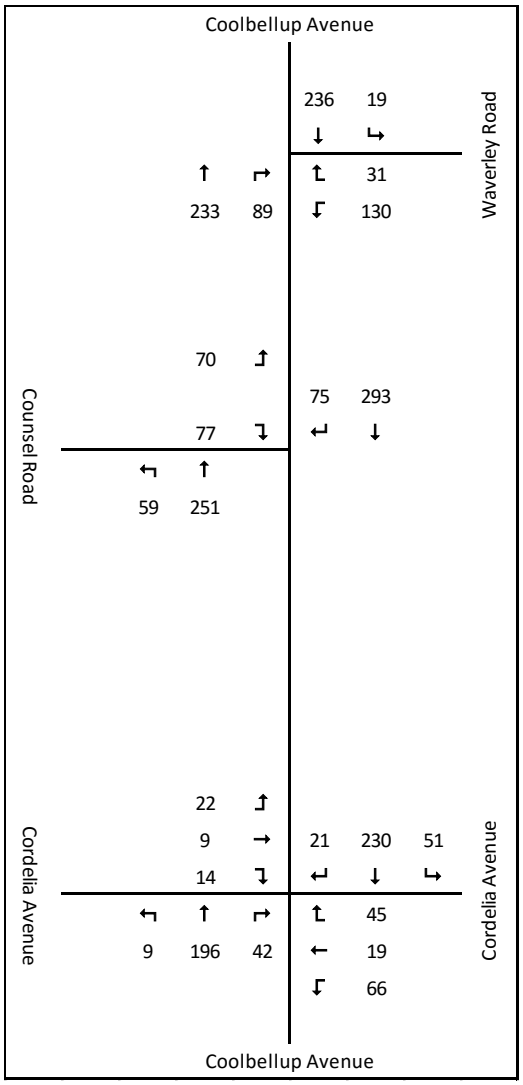


Figure 2.3: Existing (2015) Thursday PM Peak Hour Traffic Movements



2.4 Existing Integrated Transport Infrastructure

2.4.1 Public Transport

The bus services operating within 400m walking distance of the subject site are summarised in Table 2.1.

Table 2.1: Existing Public Transport Services Proximate to Site

Route #	Route Description	Nearest Stop	Frequency Peak / Off-Peak
512	Murdoch Station - Spearwood	200m (Cordelia Avenue before Coolbellup Avenue)	15 minutes peak / 60 minutes off-peak
513	Murdoch Station – Fremantle Station	150m (Coolbellup Avenue after Cordelia Avenue)	15 minutes peak / 60 minutes off-peak
940	Hamilton Hill - Perth	80m (Counsel Road before Dorcas Way)	15 minutes peak / 15 minutes off-peak

Based upon the frequency and proximity of the available bus services, the subject site is considered to be well served by public transport, which can be utilised by staff and visitors to the retail as well as the residents.

2.4.2 Walking and Cycling Networks

The subject site has excellent existing pedestrian and cycle networks which are well within the desirable 800m of the structure plan area.

Pedestrian footpaths are provided on both sides of most roads proximate to the site (including Waverley Road, Coolbellup Avenue, Cordelia Avenue and Counsel Road). A shared path is provided on the eastern side of Coolbellup Avenue, running along the length of the site frontage.

2.5 Future Road Network Planning – Perth Freight Link

The Perth Freight Link project, specifically the Roe 8 section, may have some impact on background traffic movements recorded to inform this TA. Roe 8 will run in an east-west direction to the south of the proposed development, with current designs illustrating that the link from Coolbellup Avenue to Forrest Road (located further south of the proposed local structure plan) will be terminated. This may require local traffic to redistribute and use alternative routes to gain access to the strategic road network, potentially via Coolbellup Avenue north, Counsel Road or Waverly Road.

At present, Roe 8 is the only committed road section of the Perth Freight Link project. The decision to commence the next stage of project linking to Roe 8 has currently been deferred (likely until 2017).

Given the uncertainty of the Perth Freight Link overall project, it is unclear as to how the construction of Roe 8 may change traffic patterns and volumes in the local structure plan area and correspondingly, accurate traffic modelling data does not exist in this regard. On a project specific level, it is not considered that Roe 8 will increase traffic in the local area around the proposed development, rather it will redistribute it. The existing intersections which have been assessed as part of this TA are currently demonstrated to have a lot of spare capacity and so it is estimated that little capacity issues will occur as a result of these changes. Furthermore, the inclusion of the proposed site access roundabout at the Counsel Road / Coolbellup Avenue intersection will be beneficial and aid the traffic movement in the area when the Forrest Road link is terminated at Coolbellup Avenue.

3. Planning Proposal

3.1 Land Uses

The proposal includes the construction of a supermarket, specialty retail tenancies and residential apartments as detailed in Table 3.1, with a copy of the proposal plans provided at Appendix A.

Table 3.1: Structure Plan Proposal

Land Use	Size / Number
Supermarket	3,000 sq.m
Specialty Retail	640 sq.m
Total Retail Uses	*3,640 sq.m*
Residential	61 units

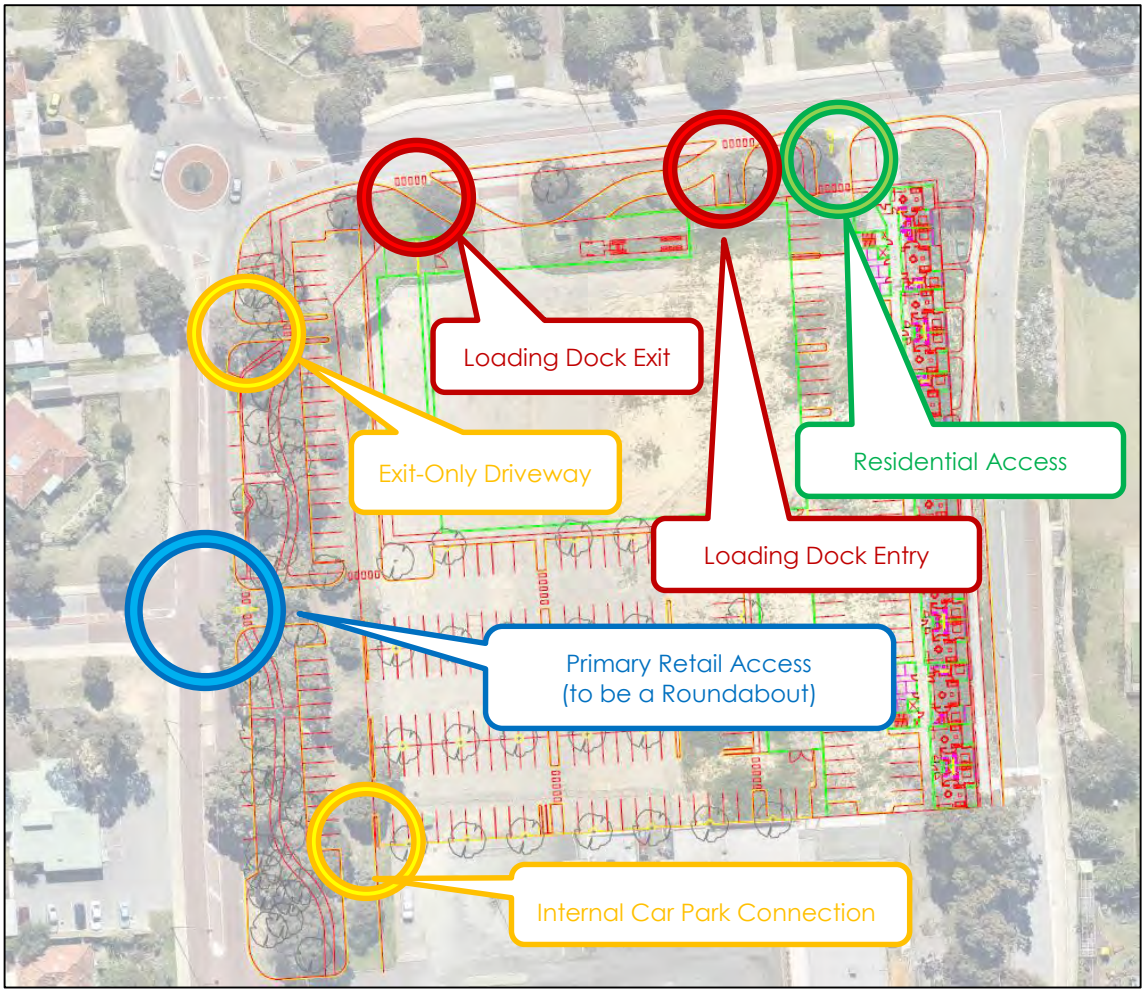
3.2 Site Access

Access to the site is to be provided at the following locations:

- Waverley Road: direct access to the residencies via footpaths for pedestrians and cyclists and access for vehicles to the resident car park via a driveway
- Waverley Road: two driveways to provide segregated vehicular access to the loading dock associated with the proposed retail uses
- Coolbellup Avenue: a one-way access driveway to the retail car park south of the Waverley Road roundabout, allowing exit movements only. Pedestrian and cycle access is also provided here.
- Coolbellup Avenue: via the eastern arm of a new roundabout at the Coolbellup Avenue / Counsel Road intersection. Pedestrian and cycle access is also provided here
- Internal carpark connection for vehicles to circulate between the site and the existing retail precinct immediately to the south.

The locations of the proposed access points are shown in Figure 3.1.

Figure 3.1: Proposed Vehicular Access Locations



3.3 Car Parking

It is proposed to provide a total of 235 spaces on site, broken down as follows:

- 170 spaces for the proposed supermarket and specialty retail uses
- 61 spaces reserved for residents within the proposed apartments
- 4 spaces for visitors to the residential apartments. It is intended that visitors to the residential portion of the site will also be able to access and utilise the small proportion of the retail car parking if necessary.

The adequacy of the proposed car parking supply is discussed further in Section 4.1 of this report.

3.4 Loading Areas

A loading dock / refuse collection area is proposed to be provided along the northern property boundary, with two access points to Waverley Road. This loading bay is to be accessed by vehicles up to and including 19m long Articulated Vehicles (AVs).

In addition, a bin store is located in the south-eastern end of the supermarket car park. This location obtains access from the proposed roundabout on Coolbellup Avenue, and is to be accessed by refuse trucks only.

3.5 Bicycle End-of-Trip Facilities

The provision of bicycle facilities is discussed further in Section 6.1 of this report.

4. Car Parking

4.1 Car Parking Provision

4.1.1 City of Cockburn Requirements

In determining car parking provision requirements for the proposal, reference has been made to the rates set out in the City of Cockburn's *Town Planning Scheme No. 3* (TPS).

In the case of the retail uses, the TPS provides a rate of parking per unit area of leasable floorspace. However, for the residential uses, the TPS defers to the WAPC *Residential Design Codes* (R-Codes). As such, the relevant parking rates from both the TPS and R-Codes have been applied to the proposal as detailed in Table 4.1.

Table 4.1: City of Cockburn Parking Requirements

Use	Description	Size	Car Parking Rate	Car Parking Provision
Shop	Supermarket	3,000 sq.m (NLA)	1 per 12sq.m NLA for 0 – 5,000sq.m NLA	250 spaces
	Specialty Retail	640 sq.m (NLA)		54 spaces
	Shop Sub-Total	*3,640 sq.m*		*304 spaces*
Residential	1-2 bedroom dwellings	61 dwellings	1 per dwelling	61 spaces
	3 or more bedroom dwellings	0 dwellings	1.25 per dwelling	0 spaces
	Visitor parking	61 dwellings	0.25 per dwelling	16 spaces
	Residential Sub-Total	-	-	*77 spaces*
Total				**381 spaces**

Based on the rates specified in the TPS and R-Codes, the proposal would be required to provide 381 car parking spaces.

4.1.2 Empirical Assessment of Car Parking Demand

Supermarket and Specialty Retail

Between July 1990 and November 2015, GTA Consultants has compiled car parking demand survey data for a range of developments located in capital cities around Australia. For shopping centres with floor areas less than 10,000 sq.m, a total of 28 developments have been surveyed. The results of these surveys indicate that these shopping centres generate an average peak car parking demand of 3.3 – 3.5 spaces per 100sq.m floor area, with an 85th percentile of 4.2 – 4.5 spaces per 100sq.m floor area.

Based upon the rates detailed above, and utilising the conservative 85th percentile of the overall peak demands, the retail component of the proposal (i.e. supermarket and specialty retail) would be expected to generate a peak car parking demand of some 164 car parking spaces.

Residential

The car parking provision rates for residents of one and two-bedroom units as specified in the R-Codes are 1 space per unit. Given the site's proximity to the neighbouring attractors (i.e. the Coolbellup Town Centre and proposed retail), and accessibility by high-quality public transport, this rate is considered adequate.

Visitor Parking

With respect to visitor parking at residential developments, GTA's car parking demand survey database provides for a peak parking demand rate of 0.14 spaces per dwelling, based on surveys of four apartment buildings. Application of this rate to the proposal would result in a peak visitor parking demand of 9 spaces.

4.1.3 Recommended Car Parking Provision

Based upon the data cited above, the car parking provision recommended for the proposal is summarised in Table 4.2.

Table 4.2: Recommended Car Parking Provision

Use	Description	Size	Recommended Car Parking Rate	Source	Recommended Car Parking Provision
Shop	Supermarket	3,000 sq.m	4.5 spaces per 100sq.m GLA	GTA database	135 spaces
	Specialty Retail	640 sq.m			29 spaces
	Shop Sub-Total	*3,640 sq.m*			*164 spaces*
Residential	1-2 bedroom dwellings	61 dwellings	1 per dwelling	R-Codes	61 spaces
	3 or more bedroom dwellings	0 dwellings	1.25 per dwelling		0 spaces
	Visitor parking	61 dwellings	0.14 per dwelling	GTA database	9 spaces
	Residential Sub-Total	-	-		*70 spaces*
Total					**234 spaces**

Table 4.2 indicates that the proposal could be expected to generate a parking demand of up to 234 car parking spaces, being 164 associated with the proposed supermarket and specialty retail uses, 61 resident parking spaces, and 9 spaces for visitors.

4.1.4 Adequacy of Proposed Parking Provision

Based upon the recommended rates, the proposed car provision of 235 spaces is expected to accommodate the anticipated demand. This assumes that a small portion of the resident visitors (5 spaces) can utilise the retail car parking if necessary. Furthermore, it is noted that there exists an opportunity to also provide indented on-street car parking spaces on Coolbellup Avenue as part of the site development.

Having regard for this, and that peak visitor parking demands for residential can typically occur outside normal peak parking demands for activity centres and retail precincts (i.e. in the evening), the proposed car parking provision is considered adequate.

4.2 Car Park Layout Review

GTA has completed a high-level review of the proposed car park layout against the requirements of the City of Cockburn TPS and AS/NZS 2890.1:2004. The review has concluded that the proposal is able to comply with these requirements, subject to the following items being addressed:

- The provision of car parking should be in accordance with the rates specified in Table 4.2
- The residential component should ensure that access for a Refuse Vehicle is able to be accommodated within the site

- The proposed loading dock and refuse areas should be designed to ensure accessibility for the required design vehicles (a 19m AV and a Refuse Vehicle, respectively).

The proposed layout is expected to be able to achieve adequacy, subject to the above recommendations being incorporated / met.

5. Loading and Servicing

5.1 Loading Bay Provision

5.1.1 City of Cockburn Requirements

The TPS requires that shops provide one delivery bay for each 1,000sq.m NLA within the site. Applied to the 3,640sq.m of retail floor area proposed, this results in a requirement for the provision of four delivery bays.

Given the majority of the retail offering on site is via one retailer, it is considered this requirement is excessive as deliveries can share and be coordinated to ensure an efficient use of space and loading bays is achieved.

5.1.2 Adequacy of Provision

The concept design plans include a recessed loading dock with capacity for two service vehicles, to be accessed from driveways to Waverley Road. In addition, service vehicles will be able to utilise the proposed on-site hardstand area along the northern property boundary to service the specialty retail tenancies for refuse collection.

GTA has prepared swept path assessments for adequacy of the proposed loading facilities, with feedback provided to ensure the layout is functional and safe. This feedback identifies that an appropriate layout and operation can be achieved, although the detail of this will be further determined during the Development Application stage of the planning process.

6. Sustainable Transport Considerations

6.1 Bicycle End-of-Trip Facilities

The bicycle end-of-trip facility requirements for developments in the City of Cockburn are detailed in the TPS. These requirements as applied to the proposal are detailed in Table 6.1.

Table 6.1: City of Cockburn Bicycle Parking Requirements

Type of User	Provision Rate	GFA / Number for Calculation Purposes	Requirement
Retail	1 space / 200sq.m NLA	3,640 sq.m	18 spaces
Residents	1 space / 4 units	61 units	16 spaces
Resident Visitors	1 space / 16 units		4 spaces
Total			**38 spaces**

Table 6.1 indicates that the proposal is required to provide 38 bicycle parking spaces, being 18 for the proposed retail component, 16 for residents and 4 for their visitors.

It is recommended that the retail component of bicycle parking be provided as a combination of secure spaces for use by staff, as well as publicly available spaces for customers, ideally located near a main pedestrian entrance to a building (but clear of pedestrian walkways). It is also recommended that a minimum of two showers and change rooms be provided for staff cyclists, being a minimum of one for males and one for females, in accordance with the TPS.

For residents, it is recommended that these spaces be provided in a secure location either within the car parking area or storage areas within their residential apartments. The visitor bicycle parking should be provided in a publicly-accessible location close to the entrance to the building.

6.2 Pedestrian Facilities

The subject site has excellent existing pedestrian and cycle networks which are well within the desirable 800m of the structure plan area.

A pedestrian path is provided on the site frontage to Waverley Road, and a shared path provided along the length of the site frontage to Coolbellup Avenue.

Internal pedestrian crossing points are provided within the retail car parking area, connecting the supermarket and specialty retail uses to the car park, the external pedestrian paths and to the adjacent development to the south.

6.3 Public Transport Accessibility

The site is located within 400m walking distance of three bus services, one of which is the high frequency route 940 service from Hamilton Hill to Perth (Esplanade Busport). Based on this and proposed pedestrian accessibility detailed above, the public transport accessibility for the proposal is considered very good.

7. Traffic Assessment

7.1 Assessment Scenarios

To assess the impact of this proposal at a structure planning level, it is appropriate to have consideration to a relevant 'Base Case' against which to test the proposal impact. The 'Base Case' examines the performance of the road network *without* the proposal at key points in time. These key points in time are defined in the *Transport Assessment Guidelines for Development* as being the year of full opening for the proposal, and 10 years after full opening.

It has been advised that the proposed retail component is to be operational by the end of 2016, with the whole development (inclusive of residential) to be complete by 2018. As such, the following assessment scenarios have been undertaken:

- year 2018 base case
- year 2018 with development
- year 2028 base case
- year 2028 with development.

To forecast the future year base case traffic flows, a 2% per annum (compound) growth rate has been applied to the observed traffic volumes.

7.1.1 Assessed Peak Periods

Based on the traffic volume data obtained and the proposed uses, the following peak periods has been considered:

- Thursday PM peak hour
- Saturday midday peak hour.

These peaks coincide with those typically experienced by retail developments. It is noted that the proposed residential use would also experience a peak in traffic generation during a weekday AM peak hour. However, given the small scale of the proposed residential use and its minimal contribution to overall traffic generated by the proposal, and noting the more significant retail component of the proposal would not typically generate a traffic peak during this period, an assessment of the AM peak hour in addition to the abovementioned peak periods is not considered necessary in this instance.

7.2 Traffic Generation

7.2.1 Traffic Generation Rates

Traffic generation rates for the proposed land uses have been considered from the following sources:

- WAPC *Transport Assessment Guidelines for Development*
- NSW RMS *Guide to Traffic Generating Developments*
- GTA's own internal database of traffic generating developments.

Based upon these data sources, the following traffic generation rates have been adopted for the structure plan:

- Supermarket:
  - 14.4 vehicle movements / 100 sq.m GLFA in the Thursday PM peak hour
  - 14.7 vehicle movements / 100 sq.m GLFA in the Saturday midday peak hour
  - 131 vehicle movements / 100 sq.m GLFA over a typical day
- Specialty Retail:
  - 5.6 vehicle movements / 100 sq.m GLFA in the Thursday PM peak hour
  - 10.7 vehicle movements / 100 sq.m GLFA in the Saturday midday peak hour
  - 55.5 vehicle movements / 100 sq.m GLFA over a typical day
- Residential Apartments:
  - 0.32 vehicle movements / apartment in the Thursday PM and Saturday midday peak hours
  - 3.2 vehicle movements / apartment over a typical day.

Application of these rates to the proposal yields results in an estimated traffic generation as detailed in Table 7.1.

Table 7.1: Estimated Proposal Traffic Generation

Land Use	Size / Number	Trip Generation Rate (vehicle movements per hour/day)			Trip Generation Estimates (vehicle movements per hour/day)		
		Thu Peak	Sat Peak	Daily	Thu Peak	Sat Peak	Daily
Supermarket	3,000 sq.m	14.4 / 100sq.m	14.7 / 100sq.m	131 / 100sq.m	432	441	3,930
Specialty Retail	640 sq.m	5.6 / 100sq.m	10.7 / 100sq.m	55.5 / 100sq.m	36	68	355
Residential	61 units	0.32 / unit	0.32 / unit	3.2 / unit	20	20	195
Total					**488**	**529**	**4,480**

Table 7.1 indicates the proposal is expected to generate some 490 vehicle movements in the Thursday PM peak hour, some 530 vehicle movements in the Saturday midday peak hour, and some 4,480 vehicle movements over a typical day.

7.2.2 Distribution and Assignment

The directional distribution and assignment of traffic generated by the proposal will be influenced by a number of factors, including the:

i configuration of the arterial road network in the immediate vicinity of the site
ii existing operation of intersections providing access between the local and arterial road network
iii distribution of households in the vicinity of the site
iv surrounding employment centres in relation to the site
v likely distribution of employee's residences in relation to the site
vi configuration of access points to the site.

Having consideration to the above, for the purposes of estimating vehicle movements, the following directional distributions have been assumed:

- Supermarket / Specialty Retail:
  - 40% to/from the south on Coolbellup Avenue
  - 20% to/from the west on Counsel Road
  - 40% to/from the north on Coolbellup Avenue

- Residential:
  - 60% to/from the west on Waverley Road
  - 40% to/from the east on Waverley Road.

Turning movements at the external intersections have been assumed in accordance with existing surveyed volumes. Directional splits and total increase in traffic movements at the key intersections has been completed and will be documented at the Development Application reporting stage.

7.3 Intersection Operation

7.3.1 SIDRA Intersection

The operation of the key intersections has been assessed using SIDRA Intersection[2] (SIDRA), a computer based modelling package which calculates intersection performance.

As detailed in the WAPC Guidelines, the critical measure of intersection performance is average delay per vehicle. Table 7.2 sets out the thresholds for intersection delays considered to provide an adequate Level of Service (LoS) within the WAPC Guidelines for priority-controlled and signalised intersections.

Table 7.2: WAPC Guideline Thresholds for Intersection Operations

Delay Component	Priority-Controlled Intersection Threshold	Signalised Intersection Threshold
Average delay for all vehicles passing through the intersection	<35 seconds*	<55 seconds
Average delay for any individual vehicle, pedestrian or cyclist movement	<45 seconds	<65 seconds

* Only applicable to non-priority legs of intersection due to zero delays associated with priority movements

The following sections set out high level findings of SIDRA assessments of the key intersections proximate to the subject site, the details of which will be documented at the Development Application reporting stage.

7.3.2 Coolbellup Avenue / Counsel Road

The operation of the Coolbellup Avenue / Counsel Road intersection has been assessed in SIDRA. It is noted that the two scenarios assessed consider the intersection in different forms due to the proposal, namely:

- in its existing form for the base case as a priority-controlled T-intersection; and
- as a roundabout with an additional eastern leg forming the site access to the retail component of the proposal.

The two layouts as assessed in SIDRA are shown in Figure 7.1 and Figure 7.2.

[2] Program used under licence from Akcelik & Associates Pty Ltd

Figure 7.1: Existing Coolbellup Avenue / Counsel Road Priority-Controlled Intersection

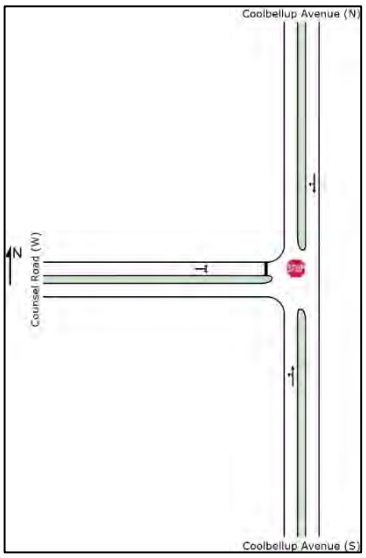
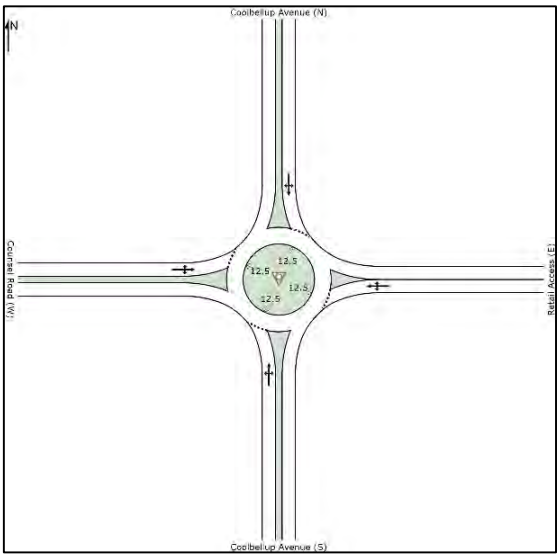


Figure 7.2: Future Coolbellup Avenue / Counsel Road Roundabout with Eastern Site Access Leg



The preliminary results of this assessment indicate that the Coolbellup Avenue / Counsel Road intersection in its upgraded roundabout form is still expected to operate acceptably with proposal-generated traffic to 2028.

7.3.3 Waverley Road / Residential Access

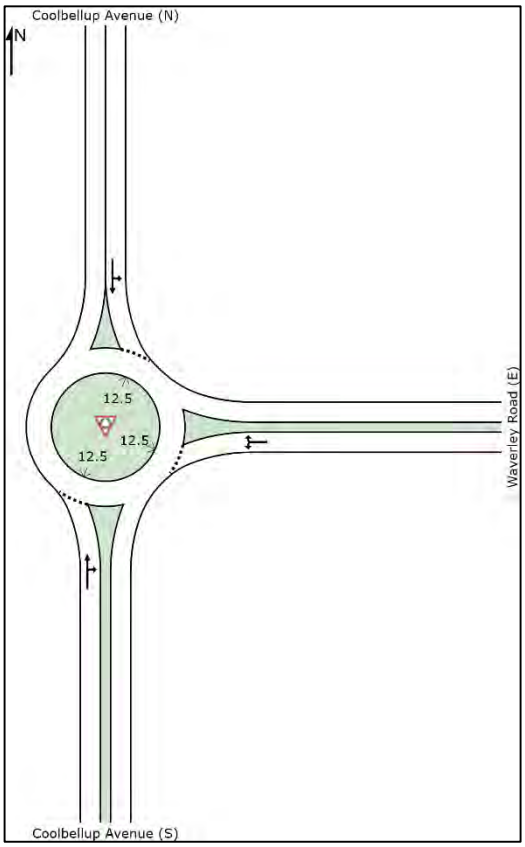
The operation of the Waverley Road / Residential Access intersection has been assessed in SIDRA. The preliminary results of this assessment indicate that the Waverley Road / Residential Access intersection is expected to operate acceptably to 2028 with the addition of proposal-generated traffic, with all delays well within acceptable limits.

7.3.4 Coolbellup Avenue / Waverley Road

The operation of the existing Coolbellup Avenue / Waverley Road intersection has been assessed in SIDRA. The layout as assessed in SIDRA is shown in Figure 7.4, based on the existing layout shown in Figure 7.3.

Figure 7.3: Existing Coolbellup Avenue / Waverley Road Intersection (Source: Nearmap)

Figure 7.4: Coolbellup Avenue / Waverley Road Intersection as assessed in SIDRA



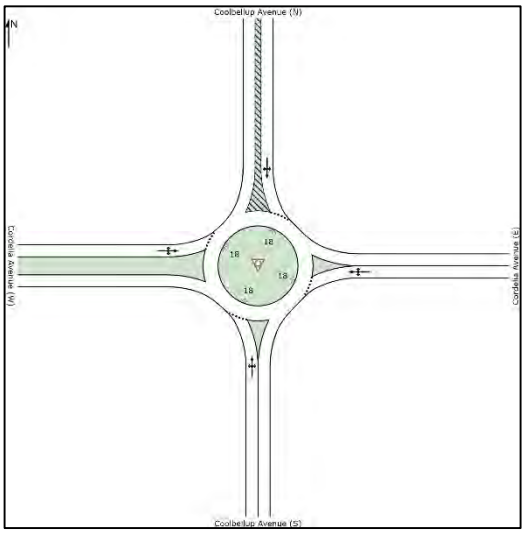
The preliminary results of this assessment indicate that the Coolbellup Avenue / Waverley Road intersection is expected to operate acceptably to 2028 with the addition of proposal-generated traffic, with all delays well within acceptable limits.

7.3.5 Coolbellup Avenue / Cordelia Avenue

The operation of the existing Coolbellup Avenue / Cordelia Avenue intersection has been assessed in SIDRA. The layout as assessed in SIDRA is shown in Figure 7.6, based on the existing layout shown in Figure 7.5.

Figure 7.5: Existing Coolbellup Avenue / Cordelia Avenue Intersection (Source: Nearmap)

Figure 7.6: Coolbellup Avenue / Cordelia Avenue as assessed in SIDRA



The preliminary results of this assessment indicate that the Coolbellup Avenue / Cordelia Avenue Intersection is expected to operate acceptably to 2028 with the addition of proposal-generated traffic, with all delays well within acceptable limits.

8. Conclusion

This Transport Assessment report has been prepared to support the local structure plan for the redevelopment of the previous Coolbellup Tavern site on the corner of Waverley Road and Coolbellup Avenue, Coolbellup.

Based on the discussions in this report, the following conclusions are made:

i The proposal generates a TPS requirement of 381 car parking spaces.

ii Based on empirical parking demand data from surveys of similar land uses, GTA recommends that a minimum of 234 car parking spaces would be adequate, with the breakdown of these spaces between the uses as detailed in this report.

iii The structure plan proposal indicates that this recommendation is able to be met with a total provisions of 254 spaces, with a small overflow visitor parking demand able to be accommodated within retail parking provision and/or on street car parking provision.

iv The structure plan car parking layout is generally compliant with relevant City of Cockburn and Australian Standard design requirements.

v The structure plan provision of loading facilities is considered adequate to service the anticipated needs for the proposal.

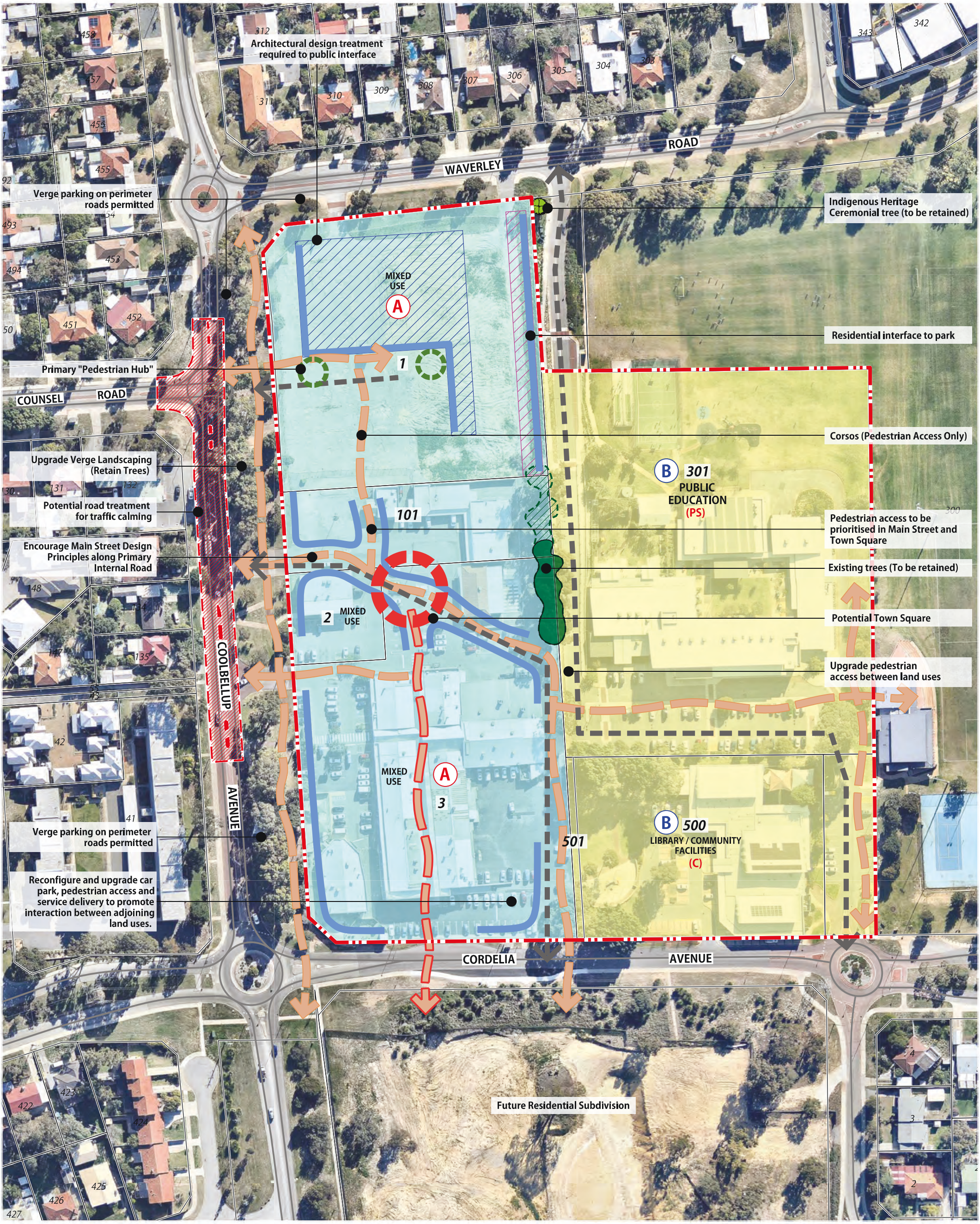
vi It is recommended that a minimum of 38 bicycle parking spaces be provided within the site, with the breakdown as detailed within this report.

vii The proposal is expected to generate up to 530 and 4,480 vehicle movements in the critical peak hour and over a typical day.

viii The surrounding road network is expected to have adequate capacity to accommodate proposal-generated traffic to the 2028 design year.

Appendix A

Structure Plan Proposal



LEGEND:

LOCAL PLANNING SCHEME RESERVES
- Public Purposes
  - Denoted as:
  - (PS) Primary School
  - (C) Civic

LOCAL PLANNING SCHEME ZONES
- Local Centre (Residential 80)

OTHER
- Structure Plan Boundary
- Important Interface
- Primary Internal Access Way (Vehicles)
- Traffic calming devices aligned with existing footpath network
- Pedestrian Link
- Pedestrian Link (Business Hours)
- Existing Trees (Subject to Removal)
- Existing Trees (To be Retained)
- Pedestrian Hub
- Potential Town Square
- (A) Mixed Use Precinct
- Indicative Commercial Building Envelope
- Indicative Residential Building Envelope
- (B) Public Purpose Precinct

NOTE: The north-south corsos, Main Street and Town Square will be subject to an easement in gross, required to be attached to any future Strata Plan to ensure the general public has legal access to these spaces at all times.

nearmap

COOLBELLUP TOWN CENTRE STRUCTURE PLAN (PLAN 1)

Lots 1, 2, 3 and 101 Coolbellup Avenue, Portion of Lot 300 Waverley Road, Portion of Lot 301 and Lots 500 and 501Cordelia Avenue, COOLBELLUP

for: Coolbellup Hotel Pty. Ltd.

Scale 1:1,000 @ A2 | N.T.S. @ A3

0 10 20 30 40 50 metres

COMPILED: CD+P		DRAWN BY:	LW/RF
DATE:	31/01/2013	REVISED:	03/11/2015
GRID:	MGA 50	DATUM:	AHD
DRAWING NUMBER:	CHOCO-2-001b	JOBCODE:	CHOCOCON
FILE ID:	M:\CHOCO\BASE\STRUCTURE PLANS\CHOCO-2-001b.dgn		

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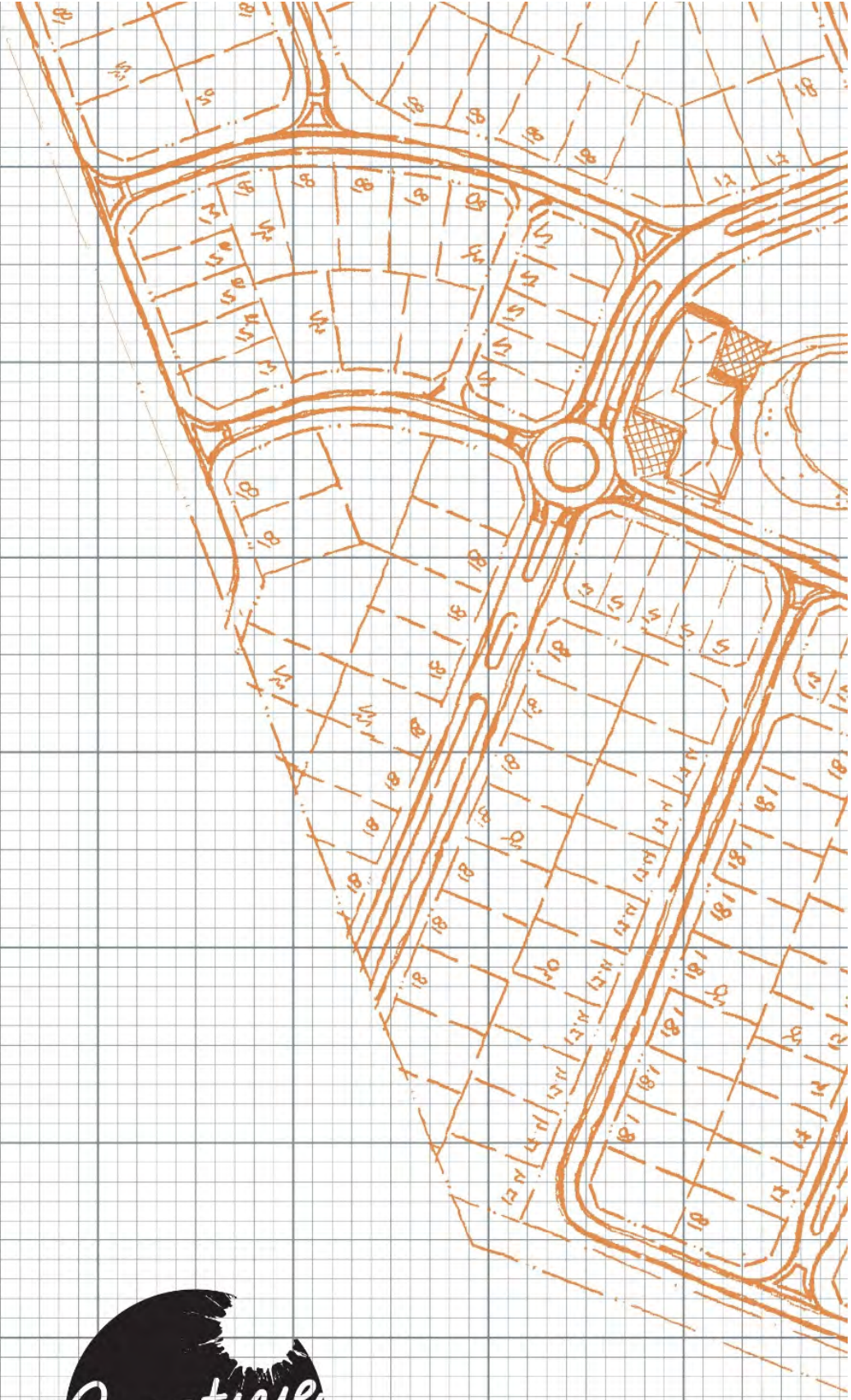

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