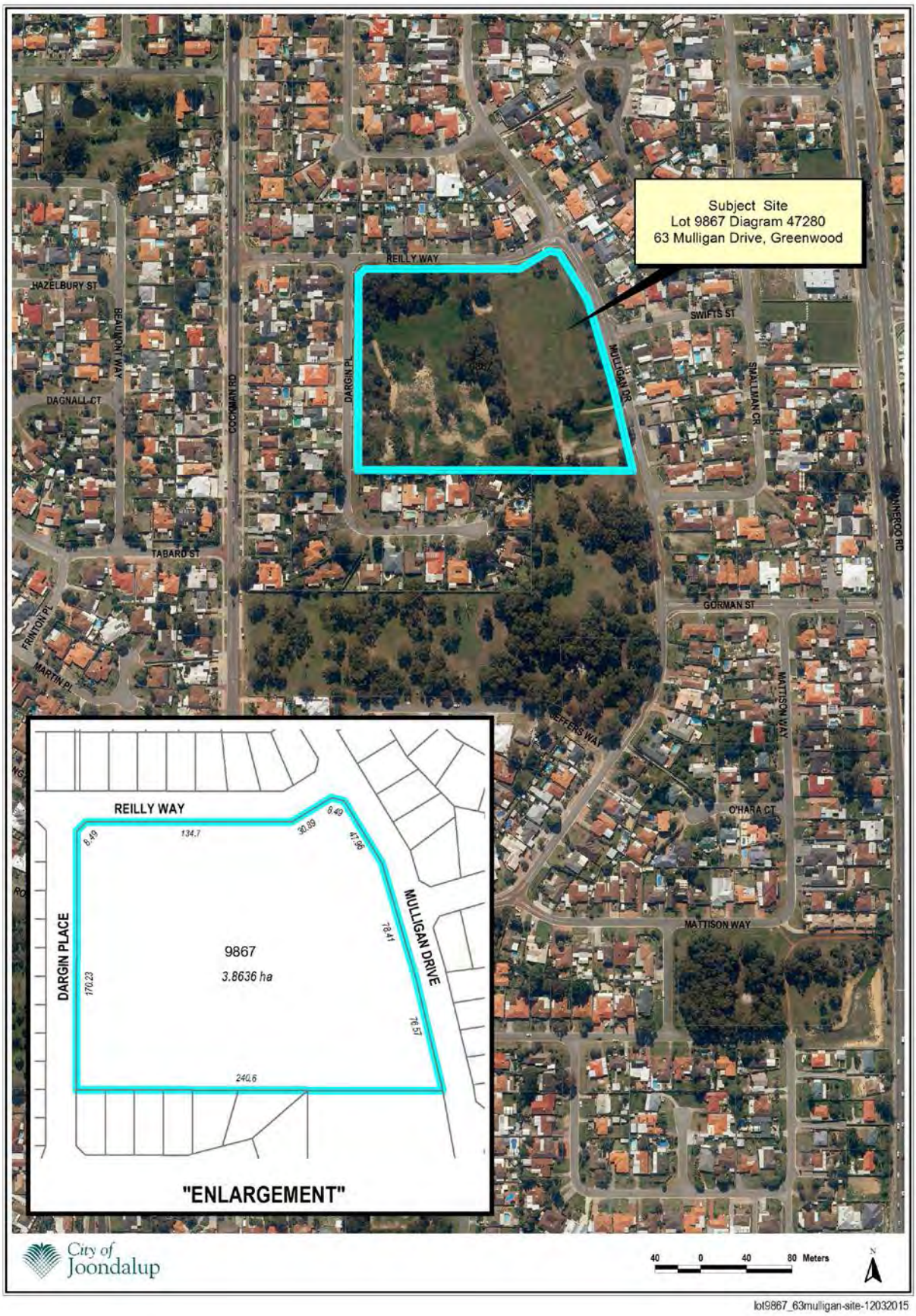
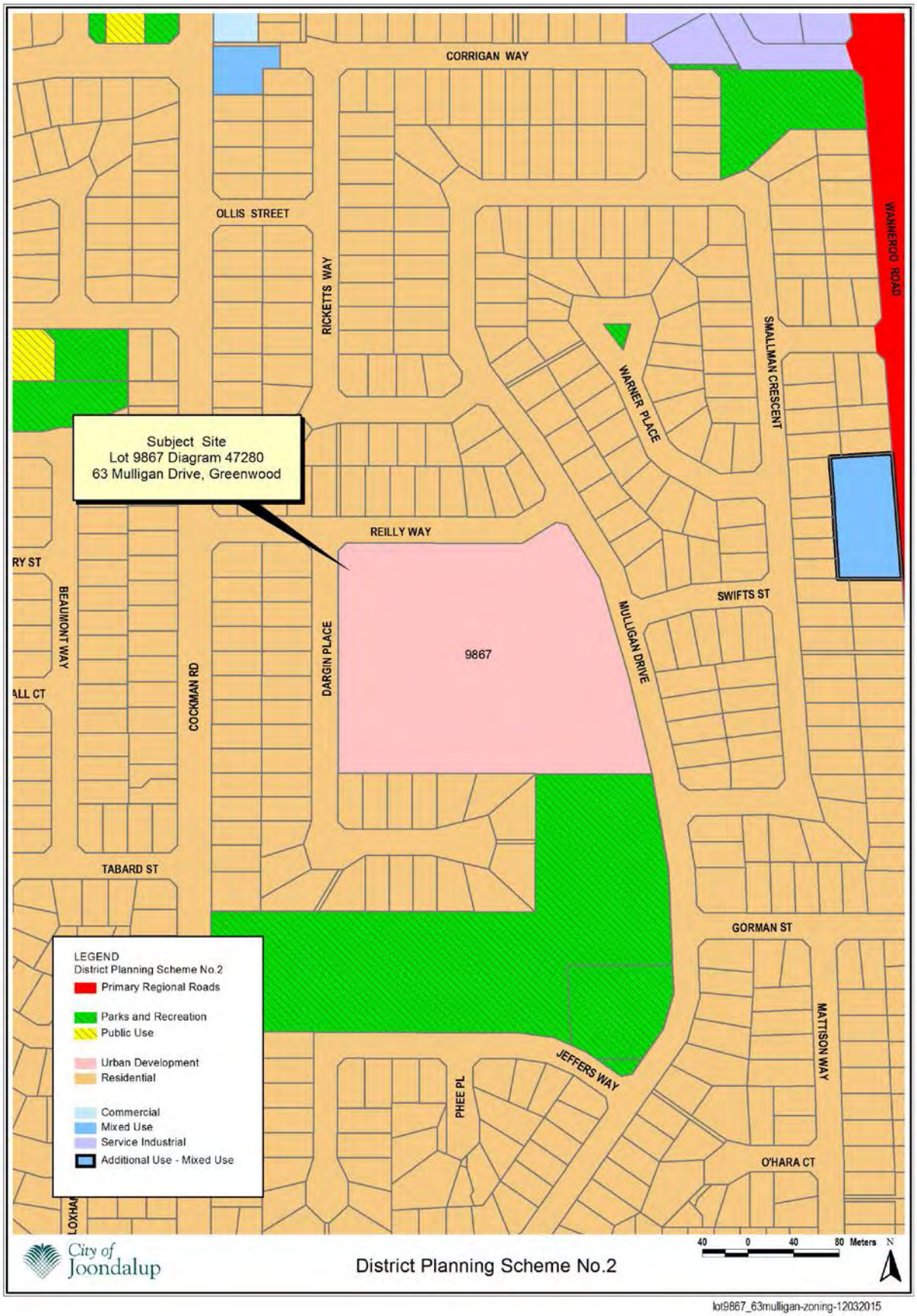

Subject Site
Lot 9867 Diagram 47280
63 Mulligan Drive, Greenwood
REILLY WAY
HAZELBURY ST
BEAUMONT WAY
DAGNALL CT
COCKMAN RD
DARGIN PL
MULLIGAN DR
SWIFTS ST
SMALLMAN CR
TABARO ST
GORMAN ST
MATTISON WAY
O'HARA CT
JEFFERS WAY
MARTIN PL
FRINTON PL
REILLY WAY
DARGIN PLACE
MULLIGAN DRIVE
9867
3.8636 ha
134.7
30.89
41.96
78.41
76.57
240.6
170.23
8.49
"ENLARGEMENT"
City of Joondalup
40 0 40 80 Meters
N
lot9867_63mulligan-site-12032015


CORRIGAN WAY
OLLIS STREET
RICKETTS WAY
WANNEROO ROAD
SMALLMAN CRESCENT
WARNER PLACE
Subject Site
Lot 9867 Diagram 47280
63 Mulligan Drive, Greenwood
REILLY WAY
SWIFTS ST
MULLIGAN DRIVE
DARGIN PLACE
9867
BEAUMONT WAY
COCKMAN RD
TABARD ST
GORMAN ST
JEFFERS WAY
PHEE PL
MATTISON WAY
O'HARA CT
LEGEND
District Planning Scheme No.2
Primary Regional Roads
Parks and Recreation
Public Use
Urban Development
Residential
Commercial
Mixed Use
Service Industrial
Additional Use - Mixed Use
City of Joondalup
District Planning Scheme No.2
40 0 40 80 Meters
N
lot9867_63mulligan-zoning-12032015

great places_

ATTACHMENT 2

GREENWOOD

LOCAL STRUCTURE PLAN

MARCH 2015

Government of **Western Australia**
Department of **Housing**

OPENING DOORS
To Affordable Housing

australand

A member of
FRASERS CENTREPOINT

CONTENTS

PART ONE STATUTORY SECTION

1.0 STRUCTURE PLAN AREA 10

2.0 STRUCTURE PLAN CONTENT 10

3.0 INTERPRETATION AND SCHEME RELATIONSHIP 10

4.0 OPERATION 10

5.0 LAND USE AND SUBDIVISION REQUIREMENTS 10

5.1 Land Use Permissibility 10

5.2 Residential 10

5.2.1 Dwelling Target 10

5.2.2 Density 11

5.3 Public Open Space 11

5.4 Conditions of Subdivision Approval 11

6.0 DEVELOPMENT REQUIREMENTS 11

6.1 Local Development Plans 11

6.2 Residential Design Codes Variations 11

PART TWO EXPLANATORY SECTION

1.0 PLANNING BACKGROUND 14

1.1 Introduction 14

1.1.1 Purpose 14

1.1.2 Background 14

1.2 Land Description 16

1.2.1 Regional Context 16

1.2.2 Local Context 16

1.2.3 Area and Land Use 18

1.2.4 Legal Description and Ownership 18

1.3 Planning Framework 19

1.3.1 Zoning and Reservations 19

1.3.2 Planning strategies and policies 20

1.3.3 Relevant Approvals, Recent Decisions and Pending Framework Changes 22

2.0 SITE CONDITIONS AND CONSTRAINTS 23

2.1 Biodiversity and Natural Area Assets 23

2.2 Landform and Soils 24

2.2.1 Landform 24

2.2.2 Soils 25

2.2.3 Acid Sulfate Soils 25

2.3 Groundwater and Surface Water 25

2.4 Water Management and Conservation 25

2.5 Bushfire hazard 25

2.6 Heritage and Site History 26

2.7 Existing and Surrounding Community 27

2.8 Community Consultation 28

2.8.1 Overview 28

2.8.3 Community Ideas Day and Public Consultation Period 29

2.8.4 Greenwood East Working Group 30

2.8.5 Key Outcomes from Community Consultation Process 30

CONTENTS

3.0 LAND USE AND SUBDIVISION REQUIREMENTS 33

3.1 Sustainable Development Outcomes 33

3.2 Urban Design Principles 34

3.3 Illustrative Masterplan 36

3.4 Built Form and Delivery 38

3.5 Interface with abutting residential 42

3.6 Open space and management 44

3.6.1 Open Space Distribution And Calculation 44

3.7 Landscape masterplan and open space design 46

3.8 Crime protection through environmental design (CPTED) 48

3.9 Residential Density and Height 49

3.10 LAND TENURE ARRANGEMENTS 51

3.11 Education facilities 51

3.12 Employment 52

3.13 Streets and movement 52

3.13.1 Movement network hierarchy 52

3.13.2 Pedestrian 54

3.13.3 Cycling 54

3.13.4 Public transport 54

3.13.5 Private vehicles and traffic 55

3.14 Water management 56

3.15 Infrastructure coordination, servicing and earthworks 56

3.15.1 Site Works 56

3.15.2 General earthworks 56

3.15.3 Infrastructure coordination & servicing 56

3.16 Developer contribution arrangements 57

3.17 Implementation 57

3.17.1 Further documentation and management plans 57

3.17.2 Land assembly 57

3.17.3 Indicative staging 57

PART THREE TECHNICAL APPENDICES

Appendix 1: Pre-Lodgement Consultation Summary

Appendix 2: Consultation Plan

Appendix 3: Arboriculture Assessment

Appendix 4: Environmental Summary Report

Appendix 5: Geotechnical Report

Appendix 6: Traffic Impact Assessment

Appendix 7: Landscape Masterplan

Appendix 8: Local Infrastructure and Servicing Strategy

CERTIFIED THAT AGREED STRUCTURE PLAN ...../20.....

WAS ADOPTED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON.....

.....
Chairman, Western Australian
Planning Commission

AND BY

RESOLUTION OF THE COUNCIL OF THE CITY OF JOONDALUP ON .....

AND THE SEAL OF THE MUNICIPALITY WAS PURSUANT TO THE COUNCIL'S RESOLUTION HEREUNTO AFFIXED IN THE PRESENCE OF:

.....
Mayor, City of Joondalup

.....
Chief Executive Officer, City of Joondalup

TABLE OF MODIFICATIONS

Modification no.	Description of modification	Date endorsed by Council	Date endorsed by WAPC

EXECUTIVE SUMMARY

Item	Data	Section number referenced within the structure plan report
Total area covered by the structure plan	3.8636 hectares	Part 2 Section 1.2.4
Area of each land use proposed: _Residential _Industrial _Commercial	 3.0393 hectares 0 0	Part 2 Section 3.6.1
Estimated lot yield	95-100 lots	Part 2 Section 3.4
Estimated number of dwellings	115 - 135 dwellings	Part 2 Section 3.4
Estimated population	250-270 people	Part 2 Section 3.4
Number of high schools	0	Part 2 Section 3.11
Number of primary schools	0	Part 2 Section 3.11
Estimated area of open space	25%	Part 2 Section 3.6.1

This Local Structure Plan report has been prepared on behalf of Australand and the Department of Housing, the sentiment is understood, however the City remains the assessing body of the structure plan, in order to accommodate urban residential development on the former East Greenwood Primary School site. The LSP establishes a layout for the local road network, residential development sites and open spaces that is coordinated and integrated with surrounding development.

The strategic intent of the project is for the Department of Housing, working in partnership with the private sector, to deliver a showcase infill development that leverages from the strengths of each party. This will provide the East Greenwood community with a result that not only delivers a diversity of housing options for a range of incomes but also adds value to its existing surrounds.

The Department of Housing welcomes this partnership with Australand as an opportunity to give the people living, working and contributing to the East Greenwood community, new housing stock that meets their needs – from downsizers to first home buyers – and does so in a way that encourages them to explore and connect with the enhanced amenities that the development will provide.

The Local Structure Plan design is the result of a rigorous pre-lodgement community consultation process, involving a Community Idea's Day, a community feedback submission period, the establishment of a Community Working Group, and the opportunity to share and interact by way of a dedicated social media Facebook page. A total of 966 comments were received through these processes, with the Community Working Group, comprised of 12 active members, contributing to the ultimate design and decision making process.

The project team responsible for the preparation of this Local Structure Plan are:

- RobertsDay; Town Planning and Urban Design.
- Australand; Development Partner, Building Design and Construction Manager.
- Department of Housing; Developer and Proponent.
- Community Working Group; Strategic Advice and Guidance.
- RPS; Environmental Consultants.
- Emerge; Landscape and Water Management.
- Transcore; Transport Engineers.
- JDSI; Servicing Engineers.

PART ONE
STATUTORY SECTION

PART ONE: STATUTORY SECTION

1.0 STRUCTURE PLAN AREA

The provisions of the Local Structure Plan (LSP) apply to Lot 9867 (63) Mulligan Drive, Greenwood being the land contained within the inner edge of the line denoting the Structure Plan boundary on the Structure Plan Map (Plan 1).

2.0 STRUCTURE PLAN CONTENT

The LSP comprises three parts;

a. Statutory Section (Part 1);

b. Explanatory Section (Part 2); and

c. Appendices – Technical Reports.

3.0 INTERPRETATION AND SCHEME RELATIONSHIP

Unless otherwise specified in this part, the words and expressions used in the LSP shall have the respective meanings given to them in the City of Joondalup District Planning Scheme No. 2 (the Scheme) including any amendments gazetted thereto.

Pursuant to clause 9.8 of the Scheme:

a. The provisions, standards and requirements specified under Part 1 of this LSP shall have the same force and effect as if it were a provision, standard or requirement of the Scheme. In the event of there being any variations or conflict between the provisions, standards and requirements of this LSP, then the provisions, standards and requirements of this LSP shall prevail.

b. Any other provision, standard and requirement of Part 1 of the LSP that is not otherwise contained in the Scheme, shall apply to the land as though it is incorporated into the Scheme, and shall be binding and enforceable to the same extent as if part of the Scheme.

c. Part 2 of this LSP and the Appendices – Technical Reports are to be used as reference only to clarify and guide interpretation and implementation of Part 1.

4.0 OPERATION

In accordance with clause 9.8.1 of the Scheme, this Structure Plan shall come into operation when it is certified by the Western Australian Planning Commission (WAPC) pursuant to subclause 9.6.3 of the scheme.

5.0 LAND USE AND SUBDIVISION REQUIREMENTS

The LSP Map (Plan 1) outlines land use, zones, and reserves applicable within the LSP area.

The zones and reserves designated under this LSP apply to the land within it as if the zones and reserves were incorporated into the Scheme.

5.1 LAND USE PERMISSIBILITY

Land use permissibility within the Structure Plan areas shall be in accordance with the corresponding zone or reserve under the Scheme.

5.2 RESIDENTIAL

5.2.1 Dwelling Target

a. Objective:
To provide a minimum of 115 dwellings within the LSP area.

b. Subdivisions to achieve the following:
Density in accordance with the Residential Density Code depicted on the Structure Plan Map (Plan 1).

5.2.2 Density

Plan 1 defines the residential density code that applies to specific areas within the Local Structure Plan.

5.3 PUBLIC OPEN SPACE

Public open space shall be provided across a minimum of 10% of the LSP area. Public Open Space is to be provided generally in accordance with Plan 1.

5.4 CONDITIONS OF SUBDIVISION APPROVAL

At the time of subdivision the following conditions may be recommended, as applicable, requiring preparation and/or implementation of the following strategies:

i. Urban Water Management Plan (City of Joondalup; Department of Water)

6.0 DEVELOPMENT REQUIREMENTS

6.1 LOCAL DEVELOPMENT PLANS

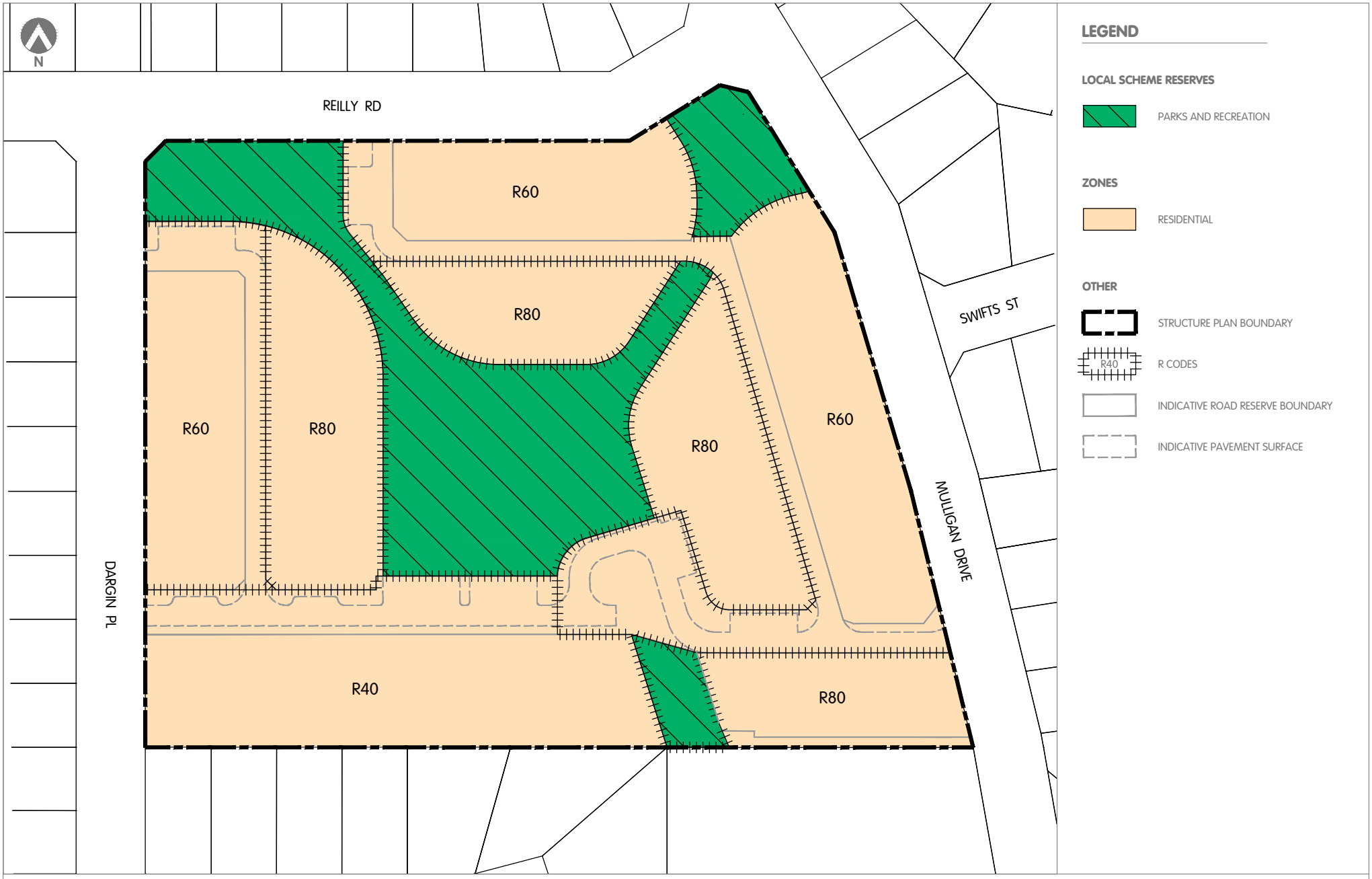
Local Development Plans are to be prepared in accordance with clause 9.12 of the Scheme, prior to any subdivision and/or development, for all lots subject of the LSP area (Plan 1).

6.2 RESIDENTIAL DESIGN CODES VARIATIONS

Table 1 sets out variations to the Residential Design Codes that constitute deemed-to-comply development within the Structure Plan area and which do not therefore require neighbour consultation and subsequent planning approval. Local Development Plans may grant further variations to the Residential Design Codes, subject to City of Joondalup approval.

TABLE 1_ RESIDENTIAL DESIGN CODE VARIATIONS

	Open Space Min total (% of site)
R40	As per R-Codes
R60	25 %
R80	25 %



great places_
robertsday.com.au
planning design place

1:1000 SIZE A3
0 metres 10 20 30 40 50

REV	DESCRIPTION	YYWMDD	DRAWN	APPR'D
E	CONSISTENT W/- SCHEME	150306	ED	AB
D	ROAD CARRIAGEWAY	141211	RF	AB
C	TREE PROTECTION ZONE	141204	ED	AB
B	ROAD CARRIAGEWAY	141201	RF	AB
A	BASE PLAN	141119	RF	AB

LOCAL STRUCTURE PLAN
Greenwood
City of Wanneroo

REF NO.	DRAW NO.	REV.
AST GRE	**RD1 200**	**E**

DISCLAIMER: ISSUED FOR DESIGN INTENT ONLY. ALL AREAS AND DIMENSIONS ARE SUBJECT TO DETAIL DESIGN AND SURVEY

PART TWO
EXPLANATORY SECTION

PART TWO: EXPLANATORY SECTION

1.0 PLANNING BACKGROUND

1.1 INTRODUCTION

1.1.1 Purpose

This Local Structure Plan (LSP) has been prepared to facilitate residential development of the former East Greenwood Primary School site at 63 Mulligan Drive, Greenwood.

The purpose of the explanatory section of the LSP report is to provide background on the design of the LSP; an overview of features on the site and its context; indicative design of the ultimate urban form; compliance with relevant planning requirements; and details for project implementation. In particular, the LSP report demonstrates how the design has been formulated based on a concerted community consultation and feedback process.

Technical reports, contained in Part Three, are summarised in this part also.

1.1.2 Background

The land subject of this LSP has a rich history dating back to 1972 when the suburb of Greenwood was originally subdivided by the Parin family. At this time, the site was designated for educational use by the State Government, with the East Greenwood Primary School built to service residents of the Greenwood locality.

In June 2007 the Department of Education and Training (DET) advised the City of Joondalup that the East Greenwood Primary School was surplus to its requirements and of its intention to collocate it with the services provided at Allenswood Primary School. The DET also announced that it intended to sell the site to the Department of Housing (DoH) for the purposes of providing an innovative development catering for a range of housing needs including, social housing, affordable rental and home ownership options. In 2009 the DET initiated a scheme amendment with the City of Joondalup to rezone the land from Public Purposes to Urban Development. The rezoning was gazetted in December 2010.

The primary school ceased operating in September 2010 and the buildings were subsequently demolished and removed in May and June 2011.

A contract for sale was executed in 2011 and the DoH sought a private sector development partner by way of an Expression of Interest Process. Australand was awarded the tender to partner with DoH in July 2013.

Refer Figure 1, Aerial Photograph.

PART TWO: EXPLANATORY SECTION

FIGURE 1: AERIAL PHOTOGRAPH

1.2 LAND DESCRIPTION

1.2.1 Regional Context

Regionally, the LSP area is approximately 17 kilometres north of the Perth city centre and situated within the Greenwood locality. The LSP area is approximately 7.0 kilometres east of Hillarys Boat Harbour, and 9.5 kilometres south of the Joondalup city centre.

The LSP area is within the City of Joondalup municipality.

1.2.2 Local Context

Locally, the LSP area is approximately 680 metres south of Lake Goollelal and 750 metres north of Warwick Open Space. The LSP area is approximately 580 metres south of Hepburn Avenue, 260 metres west of Wanneroo Road, and 670 metres north of Warwick Road. The Mitchell Freeway is approximately 2.5 kilometres to the west of the LSP area.

The LSP area is bounded by Dargin Place to the west, Reilly Way to the north, and Mulligan Drive to the east. Cockman Park shares part of the site's southern boundary. The heavily vegetated park contributes to Greenwood's character and amenity, but contains limited facilities.

The LSP area is serviced by the Greenwood Primary School, which is a combination of the former East Greenwood Primary School and Allenswood Primary School. Greenwood Primary School is approximately 750 metres west of the LSP area. Additionally, the Marangaroo Primary School is approximately 750 metres east of the LSP area, but outside the school's 'intake area' as defined by the Department of Education. In Semester 2 of 2014, the Department of Education's database listed 327 enrolled students for Greenwood Primary School, with a capacity of 465 students. Capacity is likely to be further expanded when grade 6 and 7 students transition to secondary education facilities in 2015.

The Kingsway Shopping Centre services the broader Greenwood locality from a retail and employment standpoint, and is approximately 800 metres north east from the LSP area. Warwick Leisure Centre services the broader Greenwood locality, and is approximately 860 metres south of the LSP area.

Bus services currently run along Cockman Road, approximately 150 metres to the west of the LSP area, and Wanneroo Road, approximately 300 metres to the east. Transperth Bus Service 447 operates on Cockman Road and connects the LSP area with Warwick Station to the south and Whitfords Station to the north. Transperth Bus Services 389 and 450 operate on Wanneroo Road and connect the LSP area with Warwick Station, the Perth CBD, and the Wanneroo City Centre to the north. Greenwood Train Station is located approximately 3 kilometres west of the LSP area, and has a 'Park and Ride' facility. The public transport services connect the LSP area with the broader Perth Metropolitan Region.

Refer Figure 2, Local Context.

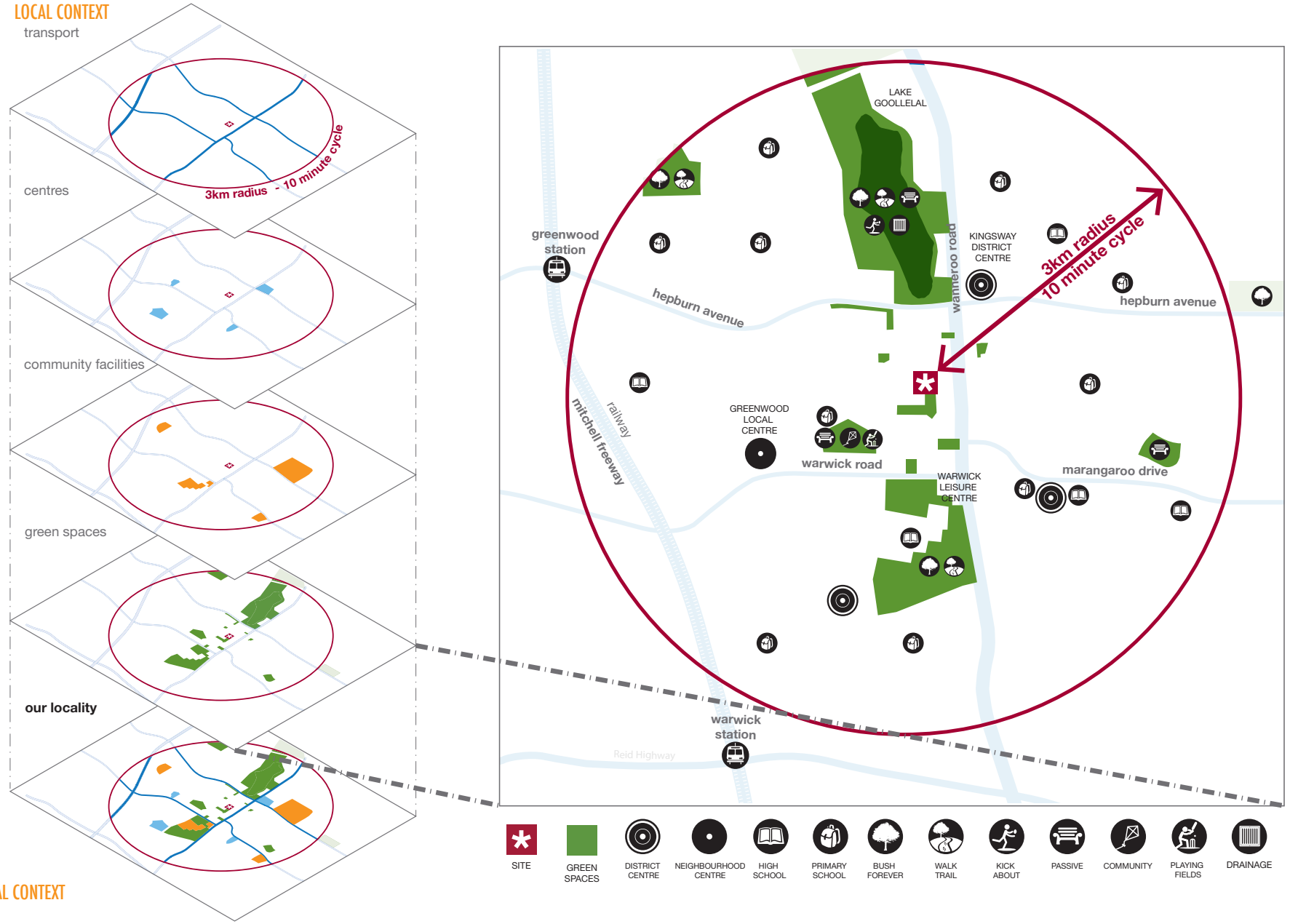


FIGURE 2: LOCAL CONTEXT

1.2.3 Area and Land Use

The Greenwood locality is typically characterised by low-density single detached residential dwellings. Some examples of grouped dwelling duplex developments exist and are scattered throughout the locality. Small-scale vehicle orientated commercial uses are located on Wanneroo Road, approximately 150m east of the site.

Cockman Park is the home of Perth Disc Golf Club, accommodating a '9 basket' course. The school car park was historically utilised by disc golfers, being located near the 'first basket' to the south east of the site.

Following demolition of the buildings and structures associated with the former school use in mid 2011, the LSP area has been left vacant. Unfettered pedestrian access to the LSP area has existed since this time. Community feedback suggests that the site has been mostly used for dog walking and disc golf parking.

The LSP area has large cleared areas of planted lawn with stands of parkland cleared trees, predominantly to the north west and central areas of the site.

The topography of the LSP area is generally uniform with the gradient slightly decreasing from approximately 37.6m AHD (Australian Height Datum) in the site's south-west to a minimum of approximately 33.4m AHD in the north-east and north west corners.

1.2.4 Legal Description and Ownership

The LSP area involves one lot as detailed in Table 1 below.

TABLE 1: LAND DETAILS

Lot no.	Street Address	CT Volume-Folio	Deposited Plan no.	Area
9867	63 Mulligan Drive, Greenwood	2741-295	47280	3.8636 ha

1.3 PLANNING FRAMEWORK

1.3.1 Zoning and Reservations

1.3.1.1 Metropolitan Region Scheme

Under the provisions of the Metropolitan Region Scheme (MRS) the LSP area is zoned 'Urban'.

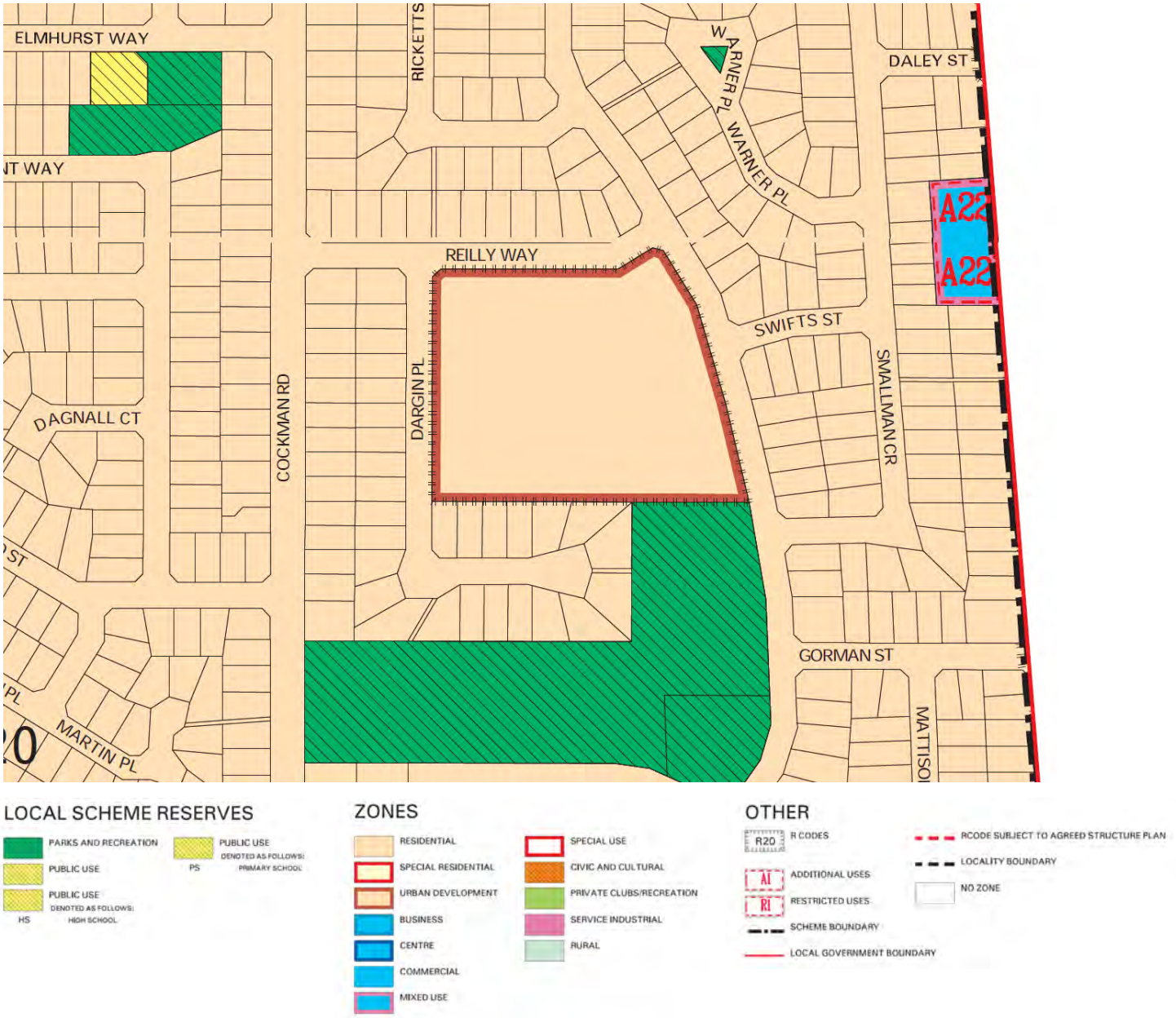
1.3.1.2 City of Joondalup

Under the provisions of the City of Joondalup District Planning Scheme No. 2 (DPS2) the LSP area is zoned 'Urban Development'. Land subject to an Urban Development zone may not be developed or subdivided unless it is in accordance with an endorsed structure plan.

The LSP area is generally surrounded by land zoned 'Residential' with an applicable density code of 'R20'. Cockman Park, immediately abutting the LSP area to the south, is reserved for 'Parks and Recreation' under DPS2.

Refer Figure 3, DPS2 zoning map.

FIGURE 3: DPS2 ZONING MAP



1.3.2 Planning strategies and policies

1.3.2.1 Directions 2031 and Beyond

Directions 2031 and Beyond (Direction 2031) provides the State with a strategic plan and spatial framework for the metropolitan Perth and Peel region. Directions 2031 establishes a vision for future urban growth, addressing population growth and land use patterns with a view to accommodating a projected increase of more than half a million people in Perth and Peel by 2031. Further, the strategy recognises that planning for the Perth and Peel region will need to accommodate 3.5 million people by 2056 almost doubling the current population.

Directions 2031 proposes a strong role for urban infill and consolidation to accommodate this increase in population, and identifies the importance of established suburbs in contributing to meeting this demand.

1.3.2.2 Draft Outer Metropolitan Perth Sub-Regional Strategy

The Draft Outer Metropolitan Perth Sub-Regional Strategy (Sub-Regional Strategy) provides further guidance for the outer metropolitan regions, categorised into four growth sub-regional areas. The LSP area falls within the North-West Sub-regional Area, which comprises the Wanneroo and Joondalup municipalities.

The Sub-Regional Strategy recognises that the City of Joondalup has limited capacity to provide growth in unconstrained land, as many former greenfield land banks have now been developed. As such, the focus shifts to infill and redevelopment opportunities in order to satisfy the identified need to accommodate a further 167,400 dwellings within the North-West Sub-regional Area. More specifically, the Sub-Regional Strategy recommends that 12,700 dwellings can be provided in infill areas within the Joondalup municipality. A function of the development of the LSP area will be to contribute to this infill dwelling target.

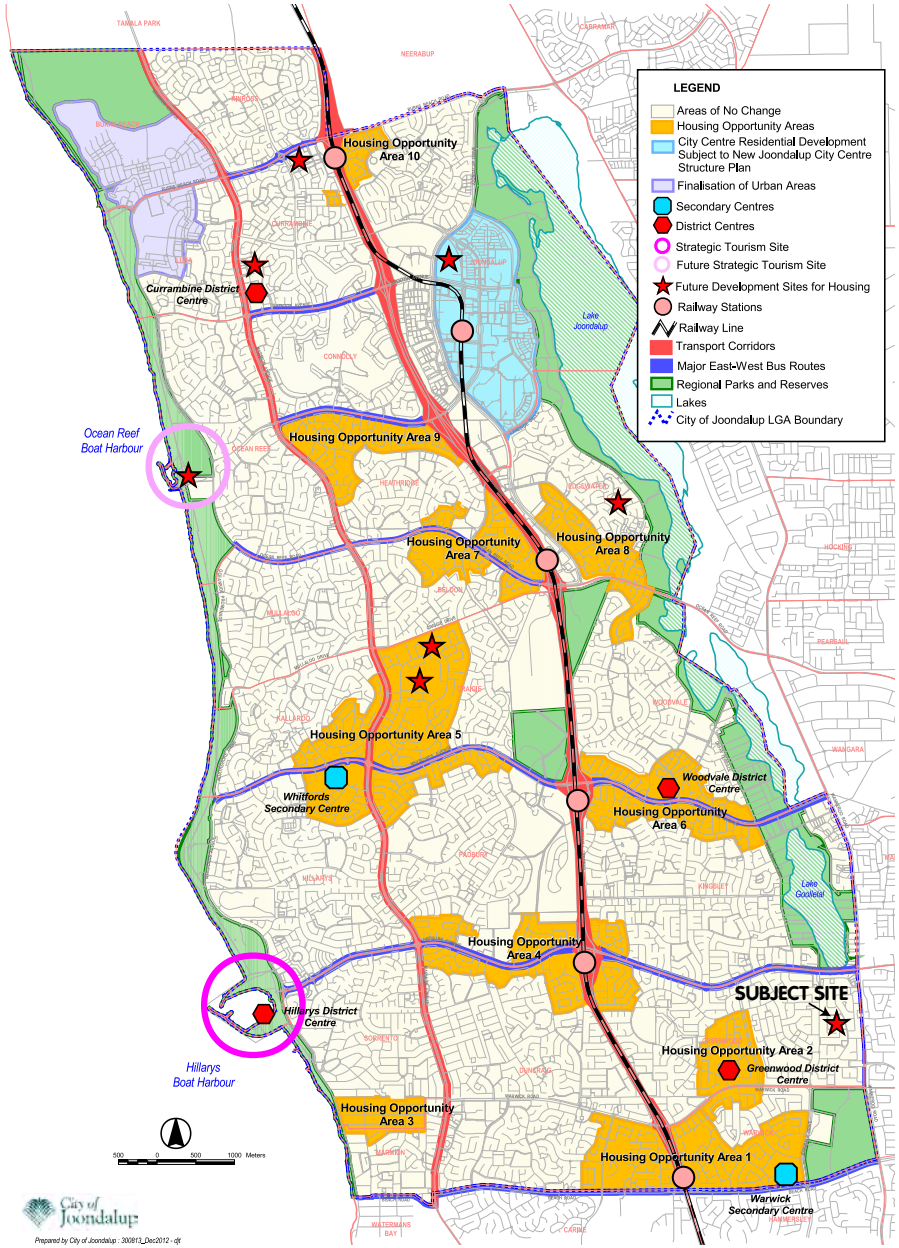
1.3.2.3 State Planning Policy No. 3: Urban Growth and Settlement

State Planning Policy No. 3: Urban Growth and Settlement (SPP3) applies to the whole of the State in promoting sustainable and well planned settlement patterns that have regard to community needs and are responsive to environmental conditions. The objectives and principles of Directions 2031 and Liveable Neighbourhoods are enshrined in this Policy.

SPP3 recognises that the majority of new development in metropolitan Perth has been in the form of low density suburban growth. This form of development intensifies pressure on valuable land and water resources; imposes costs in the provision of infrastructure and services; increases the dependence on private cars; and creates potential inequalities for those living in the outer suburbs where job opportunities and services are limited.

Accordingly, the Greenwood LSP, which provides a consolidated urban form, while delivering amenity and reducing car dependence, is consistent with the framework stipulated in SPP3.

FIGURE 4: CITY OF JOONDALUP LOCAL HOUSING STRATEGY



1.3.2.4 City of Joondalup Local Housing Strategy

The City of Joondalup Local Housing Strategy reviewed the existing housing stock and density in the City to identify opportunities to meet its Direction 2031 target of 12,700 dwellings in infill areas only. The study presented a number of key findings relevant to the LSP area, including:

Key findings

- Changing household structure will place pressure on current/existing housing supply. Providing a greater range of housing products will not only help alleviate these pressures but also go some way towards providing housing which is more affordable for singles, young couples, and the aged.
- The two factors of an ageing population and falling household sizes will be the key drivers influencing the size, direction and composition of the housing market in the City of Joondalup.
- The housing products currently available in the City do not reflect the emerging demographic trends predicted for the City. It is imperative to ensure a balanced mix of housing to avoid a mis-match between housing demand and supply.
- Limited 'land bank' opportunities for future housing exist within the City. In order to cater for future demands it is necessary to provide housing in infill areas.
- A high standard of redevelopment in infill areas will have a positive impact on streetscapes and residential amenity.
- More compact housing should be provided in order to deliver a wider range of housing to meet the social and economic needs of changing demographics in the City.
- Recognises the ability of larger 'opportunity sites' to provide a new compact form of development which will alleviate pressure from existing low density suburban areas, where it is desirable to maintain this density to accommodate family living arrangements.

Recommendation 7 of the Local Housing Strategy emphasises the need for larger "opportunity sites" to deliver a 'target' density in accordance with the State Government policy framework. Following the strategic direction set by the State in Directions 2031, the intent is for "opportunity sites" to achieve a minimum average density of 25 dwellings per site hectare. This target is to ensure the broader objective of Directions 2031, being 15 dwellings per gross urban hectare, is achieved.

The LSP area is explicitly identified as a 'Future Development Site for Housing' under the Local Housing Strategy, which falls within the "opportunity site" description as referenced in the above Key Findings summary.

Refer Figure 4, City of Joondalup Local Housing Strategy.

1.3.2.5 City of Joondalup Height and Scale of Buildings within Residential Areas Policy

The City's Height and Scale of Buildings within Residential Areas Policy (Height Policy) stipulates a maximum height limit of 8.5 metres, with the exception of minor projections such as air conditioning units, pergolas, screens etc. At the time of writing, following concerns raised in the recently adopted Local Housing Strategy, the City is reviewing the Height Policy with a view of increasing the maximum limit for opportunity sites. Notwithstanding, Local Development Plans provide the City with the opportunity to modify height limits.

1.3.3 Relevant Approvals, Recent Decisions and Pending Framework Changes

1.3.3.1 Relevant Ministerial Announcements

2007 – Minister for Education and Training announces plans to decommission the East Greenwood Primary School site and sell the site to the DoH for the purposes of urban development.

2010 – Minister for Housing announces that the DoH would seek to "deliver an innovative solution with a private sector partner and intends to engage the market through an Expression of Interest Process… with a preferred partner to be selected in August 2011. The partner will ensure the development comprises social housing, affordable rental and home ownership options."

1.3.3.2 Proposed Amendment No 73 to DPS2

Proposed Amendment No 73 to DPS2 (Amendment 73) will implement the majority of the recommendations made in the City's Local Housing Strategy. Relevant to the LSP area, Recommendation 7 of Amendment 73 states:

"It is proposed that a minimum residential density of 25 dwellings per site hectare be required for the development of lots one hectare or greater within the 'Residential' zone, as well as for development within the 'Urban Development' zone where a structure plan is required to be prepared. "

At the time of writing, the City is conducting a public consultation period with the final submission date being 10 December 2014. Amendment 73 would require the endorsement of the WAPC and subsequent final approval from the Minister of Planning prior to gazettal.

2.0 SITE CONDITIONS AND CONSTRAINTS

2.1 BIODIVERSITY AND NATURAL AREA ASSETS

The former primary school use on the LSP area has informed the structure and composition of the site's environmental and landscape features, which consist primarily of large cleared areas of planted lawn with stands of parkland cleared trees. Remnant vegetation exists surrounding the pad sites of the former primary school buildings and oval. The eastern side of the LSP area, which served the purpose of the former oval playing field is generally cleared and flat.

The LSP area is not affected by any statutory environmental listings of significance.

An environmental assessment was conducted to identify potential fauna species that may inhabit the site. It was concluded that the existing trees in the LSP area may be visited opportunistically by native birds moving through the Joondalup landscape. However, the assessment considered it unlikely that the trees would be used exclusively by native fauna species on a permanent basis.

The majority of scattered trees on the site are jarrah, marri, and coastal moort. A tree assessment was conducted by a specialist arboriculturist to identify trees worthy of retention. The assessment considered the health, structure, and species suitability. Generally, trees of significance are contained within the central spine, north-east corner of the LSP area, and with southern boundary abutting the existing residential landholdings.

The environmental overview makes the following key recommendation for the LSP area:

Retain the remnant native trees (through a combination of placing urban development in cleared land and the retention of trees eg. In POS and road reserves etc.)

Refer Figure 5, Trees of Notable Value.

FIGURE 5: TREES OF NOTABLE VALUE

Refer Appendix 3, Arboriculture Assessment.

2.2 LANDFORM AND SOILS

The Environmental Summary Report (Appendix 3), Geotechnical Report (Appendix 4) and Local Infrastructure Servicing Strategy (Appendix 6) have been used to inform this section.

Generally, the landform and soils are conducive to the accommodation of urban development.

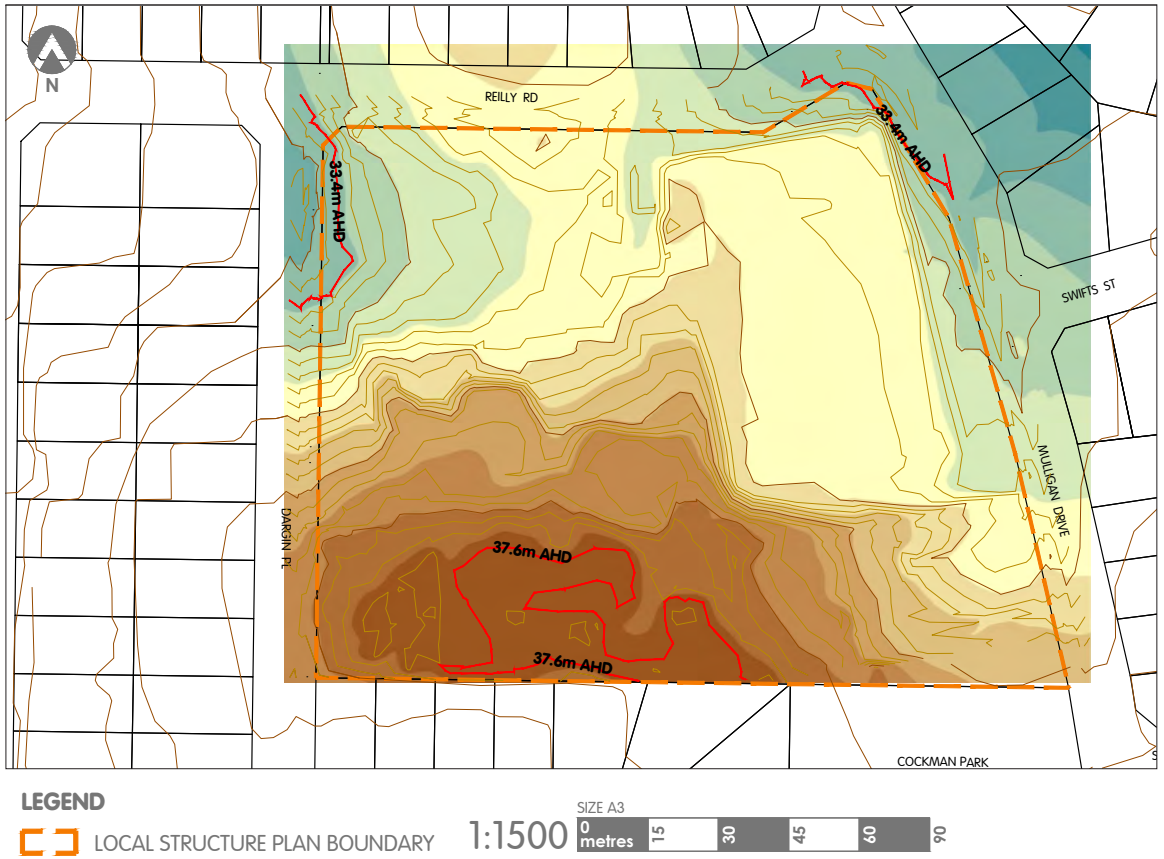
2.2.1 Landform

The topography of the LSP area is generally uniform with the gradient slightly decreasing from approximately 37.6m AHD (Australian Height Datum) in the site's south-west to a minimum of approximately 33.4m AHD in the north-east and north west corners. Level pad sites are present where the former buildings associated with the past primary school use were located.

In addition, the site had been levelled for the former school playing field located within the east of the LSP area. To allow for the levelling there is a small embankment on the western edge of the oval which is situated relatively central to the LSP area.

Refer Figure 6, Elevation Plan

FIGURE 6: ELEVATION PLAN



2.2.2 Soils

The LSP area sits upon the Spearwood Dune system, which generally consists of yellow/grey sands over limestone. Specific to the LSP area, a Geotechnical Report proposed for the LSP area confirms the following soil composition:

- Topsoil – dark brown to grey brown sandy topsoil with some silt and some rootlets to a general depth of 0.1 metres.
- Filling (Sand) – loose to medium dense, yellow-brown and grey-brown to grey, sand filling to depths of between 0.2 to 1.2 metres.
- Sand – Loose to medium density, dark grey to yellow-brown, sand with a trace of silt to test pit termination depths of between 2.5 and 2.8 metres.

The buildings associated with the former East Greenwood Primary School were removed in May and June 2011. It is possible that undiscovered services and buried fences or similar may be present within the LSP area.

Generally, the LSP area is capable of accommodating residential urban development which includes minor cut and fill site works. The Geotechnical Report makes some recommendations for construction techniques that can be implemented and enforced at the detailed design phase.

Refer Appendix 5, Geotechnical Report.

2.2.3 Acid Sulfate Soils

The Department of Environment's Risk Mapping indicates that the entire extent of the LSP area has no known risk of acid sulfate soils occurring within 3 metres of the natural soil surface.

2.3 GROUNDWATER AND SURFACE WATER

No surface water features exist within the LSP area.

The Department of Water's (DoW) Perth Ground Water Atlas estimates the maximum groundwater elevation across the LSP area to be between 22 and 24 metres AHD, giving a minimum clearance to groundwater of 10 metres.

The LSP area overlies the Perth Coastal Underground Water Pollution Control Area (Priority 3), which means water supply sources can co-exist with other land uses such as residential development. The development of the site is not considered to have significant pollution potential. Stormwater management and drainage to groundwater will be managed in accordance with the Better Urban Water Management Framework.

Refer Appendix 4, Environmental Summary Report.

2.4 WATER MANAGEMENT AND CONSERVATION

Pre-lodgement consultation with the DoW in November 2014 confirms that a Local Water Management Strategy (LWMS) is not necessary to support the proposed LSP, given the relative size of the proposed development coupled with the lack of water infiltration constraints within the LSP area.

Pre-lodgment consultation with the City of Joondalup confirms that the surrounding urban stormwater catchment appears to be at capacity. It is therefore necessary to retain and infiltrate a large majority of stormwater on the site, within the proposed POS area. The management of stormwater and implementation of water sensitive urban design will be formally documented in an Urban Water Management Plan (UWMP) prepared as a condition of subdivision approval, as recommended by the DoW.

Refer Appendix 4, Environmental Summary Report.

2.5 BUSHFIRE HAZARD

The subject site is not within a bushfire risk area and is generally cleared, with scattered strands of parkland trees. As such, bushfire risk is considered low.

Refer Appendix 4, Environmental Summary Report.

2.6 HERITAGE AND SITE HISTORY

The site subject of the LSP area was first designated a government primary school site in the late 1960s, during the time the Parin family first subdivided and developed the Greenwood locality. The East Greenwood Primary School serviced the immediate surrounding community for more than four decades, and had an active Parents and Community Group (P&C Group) and strong teaching staff. A few of the teaching staff serviced the school for a period of 20+ years, with some valued staff teaching for around 40 years at the former school.

The community consultation process (detailed in the forthcoming sections) recorded many historical memories of the former use. Many community members recognised significant sports carnival events, local sporting events such as football and soccer, P&C meetings, school concerts and fetes, and various fundraising efforts for school amenities, such as the kiln for the art room and local business involvement. The community also recognised the works of a former notable school pupil who has excelled to become a leading Australian Cartoonist, writing and drawing the Australian comic strip Ginger Megs.

In 2007, the Minister for Education and Training announced that East Greenwood Primary School and Allenswood Primary School would be replaced by one new school collocated on the Allenswood site (to be known as Greenwood Primary School). This would result in the East Greenwood Primary School site being surplus to the DET needs. The East Greenwood Primary school was closed toward the end of the 2010 school year after completion of the new Greenwood Primary School in late 2010.

The site was sold to the Department of Housing and rezoned in 2010 to allow for residential development, subject to an endorsed local structure plan.

Refer Figure 7, Historical Photographs of Former East Greenwood Primary School.

FIGURE 7: HISTORICAL PHOTOGRAPHS OF FORMER EAST GREENWOOD PRIMARY SCHOOL

2.7 EXISTING AND SURROUNDING COMMUNITY

Development of the area dates primarily from the late 1960s, with rapid growth taking place during the 1970s. The population has declined since the early 1990s, as a result of relative stability in dwelling stock and a decline in the average number of persons living in each dwelling.

Analysis of the age structure of the Greenwood population in 2006 compared to that of the City of Joondalup shows that there was a smaller proportion of people in the younger age groups (0 to 17) but a larger proportion of people in the older age groups (60+).

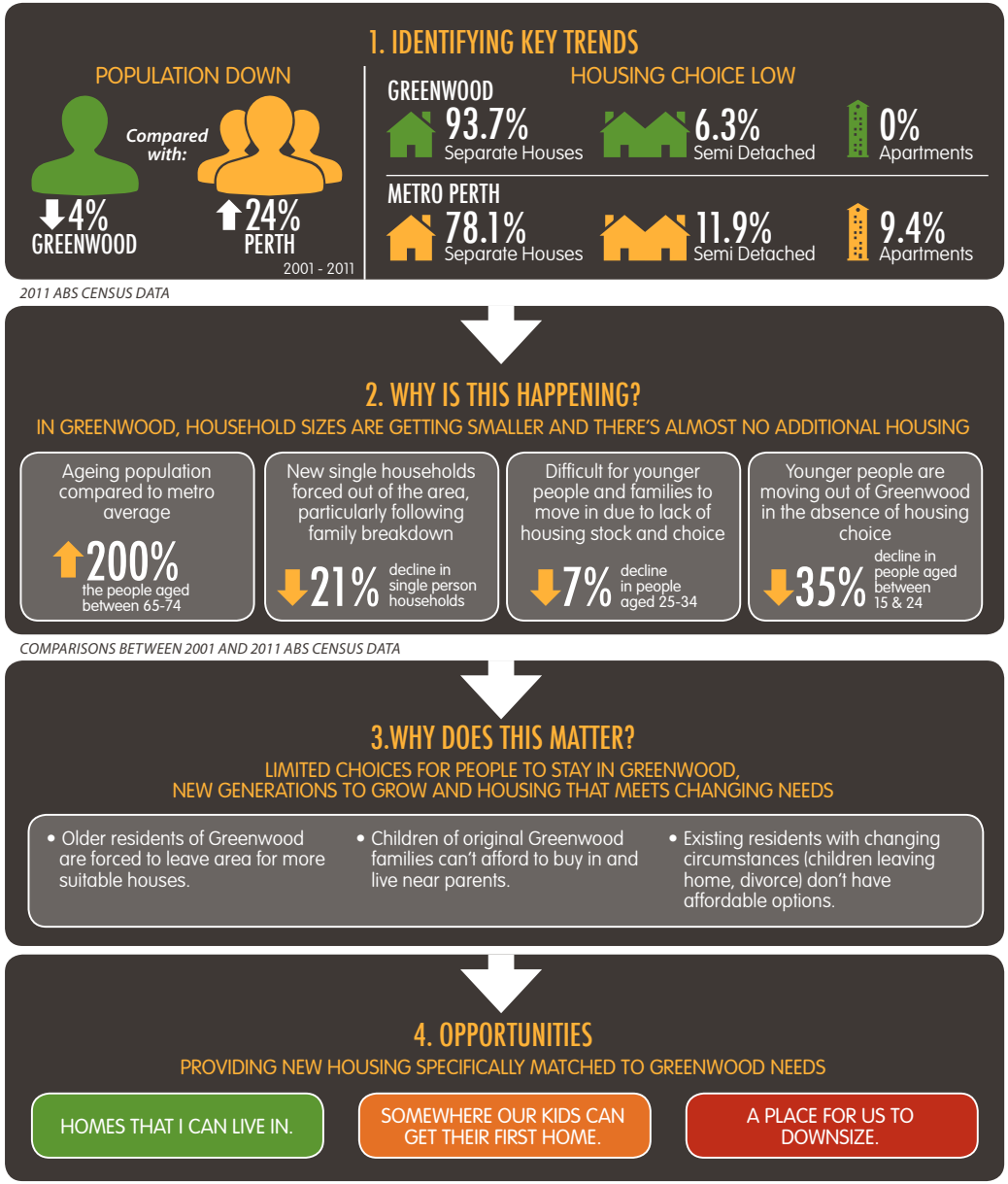
As an area like Greenwood ages, more housing stock is freed up through migration and mortality enabling families to re-populate these areas. Family breakups can also result in single parent families and lone person households seeking out affordable and suitable housing options. The process of regeneration occurs most readily in areas that have managed to minimise loss of family services and that can adapt by developing a diversity of housing stock suitable to a wider variety of household types.

Development of the LSP area therefore provides the opportunity to target a niche infill market within Greenwood, particularly as empty nesters and lone person households look to upgrade to a newer home and/or downsize their family size dwellings.

Figure 8 provides a snapshot of the demographic analysis process used to gain a better understanding of existing and future housing needs in Greenwood. The principal conclusion that can be drawn from the analysis is the significant potential for development of the LSP area to assist in creating housing opportunities for a broader range of people. The key groups identified include:

- Couples and singles with no children.
- First home buyers.
- Downsizers, particularly those in the area looking to upgrade to a new dwelling.
- Single parent families.

FIGURE 8: UNDERSTANDING LOCAL HOUSING NEEDS



2.8 COMMUNITY CONSULTATION

2.8.1 Overview

On 28 June 2011, a petition was submitted to Parliament with 847 signatures requesting up-front early consultation, following some community concern with the redevelopment of the East Greenwood Primary School site. As part of the tender process, the DoH requested that any potential development partner would undertake community consultation to the satisfaction of the City of Joondalup. To date, Australand has been committed to exceeding its LSP statutory obligations in this area, with a rigorous community consultation programme implemented since its appointment.

At the time in which the LSP area was rezoned to Urban Development, it was originally agreed with the City of Joondalup that community consultation would take place prior to the submission of the LSP. A Community Consultation Plan was prepared and agreed to by the City, consisting of:

- A Community Ideas Day.
- Community feedback form collection period (opportunity for community to submit comment).
- A Community Working Group (added as a response to community requests for further feedback opportunity).

On the 2nd August 2014 a Community Ideas Day was held in accordance with the terms of the agreed plan.

The forum was well attended by approximately 150 community members and a significant amount of feedback was gathered to assist the development of the LSP.

In addition to the community's input in relation to the design of the project there was considerable community feedback about the process of consultation and in response to that feedback the proponents resolved to undertake further refinement to the plan to increase the depth and local relevance of the consultation. This resulted in the establishment of the Greenwood Working Group, the role of which was to provide input into the development of the LSP.

Beyond the scope of the agreed Community Consultation Plan, Australand implemented the following initiatives.

- A facebook page for community members to share comments and provide feedback.
- A dedicated website devoted to providing information to the community, including a full time community liaison service for all enquires via phone or email.

In its entirety, the community consultation process resulted in a number of community members participating in the following manner:

- Approximately 150 local community members participating in the Community Ideas day held on 2 August 2014.
- 51 Feedback forms totalling almost 1000 comments being submitted by 9 September 2014.
- 22 Working Group EOI forms being submitted and a selected Working Group of 12 community members.

Refer Appendix 2, Consultation Plan, Community Feedback Summary, and Working Group Session Minutes.

2.8.2 Vision and Objectives Presented to the Community

From its inception, the aim of the project has been to deliver a quality housing development that enhances the quality of life for the existing Greenwood community and future residents.

A project vision was presented at the Community Ideas Day - A Village in the Green. The vision is to achieve a fusion between the leafy and spacious sense of place that is "Greenwood" and the more urban character that the proposed housing choices will bring. It is underpinned by four key objectives:

2.8.3 Community Ideas Day and Public Consultation Period

On 2 August 2014, a Community Ideas Day was held at Warwick Leisure Centre which attracted approximately 150 local community members. The ideas day format was intended to be an informal setting where community participants could receive and share important information, engage and contribute ideas to the design of the LSP. Importantly, the design of the forum was not a 'design and defend' exercise, rather the focus was on community contribution in-lieu of a formal draft plan being completed for the LSP area. Community participants were provided with the opportunity to speak with the project team, and give feedback on the broad vision and ideas that were presented.

Community sentiment was captured in the following manner:

- Comments collected on post-it notes from the participants.
- Comments collected from feedback forms lodged on the day and within a one month feedback period – total 51 forms submitted.
- The Greenwood East Working Group Community Facebook page and email address was established, which was used to keep the conversation going, and to respond to community enquiry.

Community feedback was summarised according to the four objectives of the vision. This enabled a more rigorous testing of the vision and provided a framework for balancing project objectives with community desires.

A total of 966 comments were received from the above processes, which are summarised in Table 2.

TABLE 2: COMMUNITY FEEDBACK SUMMARY

HOUSING CHOICES	39.9 % _commented on density and land use
GREAT PUBLIC SPACES	36.1 % _commented on open space, recreation and nature
HIGH QUALITY DESIGN	12.3% _commented on height, layout of site and built form
NEIGHBOURHOOD CHARACTER	11.7% _commented on traffic, parking and pedestrian safety

966 Total Comments received	approx. 150 estimated participants at Ideas Day	51 Total feedback forms received

2.8.4 Greenwood East Working Group

Following the feedback received during the community consultation process – specifically, the request for more opportunities for involvement – a Community Working Group was established. An aim of the Working Group was to capture the representative views of a suitable cross-section of the community, particularly those who live closest to the site, through an EOI process. Of the 22 EOI forms that were submitted, a total of 12 members were selected to form the Greenwood East Working Group. The selection was based on a number of factors including age, gender, address relative to the site, representation of local community associations, availability, and consideration of justification submitted. The Working Group sessions were run by independent facilitators, Estill Associates, and observed by City of Joondalup Councillors John Chester and Brian Corr.

Refer to Appendix 2 for detailed minutes and agenda.

The objective of the Working Group was:

To provide input to the development of the emerging Structure Plan for the East Greenwood Primary School site redevelopment.

The 12 Working Group members collaborated in a transparent, and open manner to help the project partners better understand and address key community issues. An invaluable understanding of local needs and aspirations was gained as a result of the process.

Two Working Group sessions occurred following the Community Ideas Days and at the conclusion of the feedback period. The first session occurred on 30 September 2014. Following feedback received during the Ideas Day and via feedback forms, the vision was developed with Working Group in the following key areas:

- Commitment to no 4 storeys buildings.
- 1 and 2 storeys buildings around the edge of the site.
- Potential for substantial mature tree retention.
- Better understanding of district traffic issues gained.
- Spreading vehicle access points around surrounding streets.
- Architecture responsive to the surroundings.
- Interpretation of school history.

The second session occurred on 13 October 2014. Following feedback from the Working Group at the first session, issues were addressed and the vision refined as follows:

- Overlooking – a 12m tree protection zone was established on the rear boundary and commitments made on minimum window heights.
- Public Open Space – 13% provision, over and above the 10% requirement.
    - native landscaping and recycled brick and timber ('rustic') materials in open space.
- Yield estimate provided at 115 – 135 dwellings.
- Potential parking locations shown, including on lots, visitor parking and Cockman Park parking.
- Examples of garbage bins in lanes and the desired lane character provided as requested.

The Working Group raised concerns with the intersection proposed at the time near the corner of Mulligan Drive and Reilly Way. They also requested more design detail in the LSP, both of which have been addressed in this report.

2.8.5 Key Outcomes from Community Consultation Process

A concept plan was presented at the conclusion of the second Working Group Session. The twelve members were surveyed independently on their level of support for the plan, the results of which represent a key outcome of the consultation process, in particular, that none objected nor strongly objected to the plan:

A summary of the community feedback and key outcomes resulting from the aforementioned processes are shown in Table 3 opposite.

TABLE 3: COMMUNITY FEEDBACK AND LSP RESPONSE

COMMUNITY FEEDBACK	RESPONSE	ACHIEVED
HOUSING CHOICE		
The community has sought clarification on the level of social housing to be provided in the project.	The project will provide 1 in 9 dwellings for social housing, including catering for the needs of elderly, people with disabilities and single parent families.	✓
Community feedback suggested that there are residents looking to downsize to low maintenance properties within Greenwood	Australand will be proposing low maintenance dwellings to suit this buyer profile.	✓
Community feedback suggested that the development should allow for people to age in place without having to live in a retirement village	Some single storey dwellings that are adaptable to allow for people to age in place will be proposed.	✓
Feedback was received that housing opportunities should be made available at price points accessible to First Home Buyers	An array of housing options will be incorporated that will allow people on low to moderate incomes to acquire a property in proximity to their families and friends.	✓
The community expressed a desire to see a range of dwelling types provided	The project is proposing 1, 2 and 3 bedroom product in the form of single storey and double storey homes, as well as apartments.	✓
PUBLIC OPEN SPACE		
The community wanted surety that 10% public open space (POS) would be provided	Australand is aiming to achieve a provision of approximately 25% of POS, well above the 10% POS required.	✓
The community wants to see the retention of native vegetation and for implemented vegetation to be predominantly native	Predominantly native vegetation and landscaping that fits in with the existing trees to be retained on site will be included.	✓
The community expressed a desire to retain trees on site and located their preference for retention at the Community Ideas Day	Comments have been taken on board and and the developer is proposing to retain a significant number of trees in the north west corner, centre and near the southern boundary of the site in accordance with community feedback.	✓
The community expressed a desire that the POS should be useable by all local residents and not just those within the development	The POS will be accessible to all residents with pedestrian connections being provided through the site down to Cockman Park	✓
The working group do not want to see public toilets within the POS	Public toilets within the public open space will not form part of the landscape proposal.	✓
Members of the community expressed a desire to see some form of interpretation of the sites former use as a primary school in the landscaping	The developer will be looking to identify a former school building footprint, incorporate a new playground and other opportunities to celebrate the social history of the site as part of the development.	✓
The community expressed a desire to see sustainability incorporated into the built form outcomes	Australand will be assessing the project against the Green Building Council "Greenstar Communities" rating tool and also setting minimum NATHERS ratings for the environmental performance of individual homes.	✓

COMMUNITY FEEDBACK	RESPONSE	ACHIEVED
HEIGHT AND DENSITY		
The community strongly objected to 4 storey apartments	There will not be any 4 storey apartments anywhere on the site.	✓
The community expressed concern around the inclusion of apartments	This feedback has been taken on board. Only two locations are proposed for 3 storey apartments around the central open space area, away from the edges of the site.	✓
The community expressed concerns about privacy and overlooking onto housing that fronts Dargin Place and backs directly onto the development	Minimum rear setbacks have been increased to 12m with second storey windows to be a minimum height of 1.65m from floor level to prevent overlooking. A protection zone has also been introduced to ensure the existing trees are retained.	✓
Some community feedback suggested that there should not be any dwellings above 1 storey along Dargin Place, Reilly Way or Mulligan Drive	The existing surrounding zoning allows 2 storey houses. Notwithstanding Australand have taken this feedback on board and houses around the outside edge of the project area will be predominantly single storey.	✓
The community expressed a desire to see artist's impressions as part of the LSP submission.	Artist impressions will be provided as part of the Local Structure Plan submission.	✓
TRAFFIC		
The community expressed concerns about the additional traffic placed on the neighbouring streets	As agreed through the Working Group process the project will provide street and lane connections to all street frontage to disperse traffic. The LSP will contain a traffic assessment which will compare the traffic volumes to the previous school use and address the relative effect on the wider street network including the Cockman and Warwick Road intersection. The resultant traffic will be equivalent to the site's former use.	✓
The community does not want to see roads connecting through the site that promote rat-running	The street network will be designed to ensure outside traffic does not short-cut through the site.	✓
The community, including residents directly adjacent to the site, did not want to see crossovers along Dargin Place, Reilly Way and Mulligan Drive	The proposed dwellings will be provided with rear lane access. This will allow houses to front the existing streets with generous landscaped verges. Garages, bin collection points and other services will be kept from view in the rear laneways.	✓
The community expressed concerns about placing an access/egress point near the intersection of Reilly Way and Mulligan Drive due to pre-existing traffic issues.	The proposed access point near the intersection of Reilly Way and Mulligan Drive has been removed.	✓
The community expressed concerns around the provision of visitor parking	Visitor parking will be provided throughout the site and above the minimum required standards.	✓

3.0 LAND USE AND SUBDIVISION REQUIREMENTS

3.1 SUSTAINABLE DEVELOPMENT OUTCOMES

From its inception, the Australand and Department of Housing partnership established a corporate commitment with the intent of delivering a development that delivered best practice sustainable outcomes for the East Greenwood community. That is, due consideration given to economic, social, and environmental design attributes in the interest of serving current and future demographics. The necessity for a sustainable development outcome was predicated through the community consultation process.

The intent of the detailed design is to deliver a range of housing products to best cater for a wide variety of household structures. This approach ensures the current gaps in available housing stock are addressed, including couples and singles with no kids, first home buyers, downsizers, and single parent families.

The inclusion of a rigorous community consultation process ensures that social factors are not only considered, but solutions and outcomes are suggested by the community for the community.

TABLE 4: SUSTAINABLE DEVELOPMENT OUTCOMES

PLACE

Active community development program for new and existing residents

Celebrated history of learning in the public domain and community life

'Success' and 'achievement' school motto reflected in the quality of housing and community

Diverse character responsive to sub-urban context and broader opportunities

LEARNING

Generous open space provision, double the standard requirement

Existing activities enhanced including car parking, dog walking and active recreation

Safety and Security achieved through the application of CPTED principles

A proud community empowered to achieve greatness, collectively and individually

HOUSING

Affordability Significant portion of housing priced below the Greenwood median

Choice of up to 20 housing options in response to demographic analysis

Lifelong housing through adaptable housing design and downsizing options

Architectural quality balancing unity and variety

HEALTH

Active living including walking, cycling, exercise circuits and kick about areas

Mental well being supported via socially dwelling engaging frontages and spaces

Ageing in place improves health, well being and life expectancy

BUILDING MANAGEMENT

Construction Management initiatives to minimise disruption, nuisance and noise

Waste reduction, through construction of new dwellings

Recycling of unretainable trees

Environmental Management Plan to address vegetation and stormwater

ECOLOGY

Biodiversity and carbon capture through significant tree retention and POS

Water wise households and public landscapes

Waste reduction during building construction

Energy Efficiency Average 7.0 star NaTHERS

Greenstar communities, rating minimum 4 star rating for the development

ACCESS

Public accessibility with about half of the site accessible to the public

Inclusiveness from high visual and physical permeability

Neighbourhood connectivity enhanced for walking and cycling

People place designed for priority over vehicles

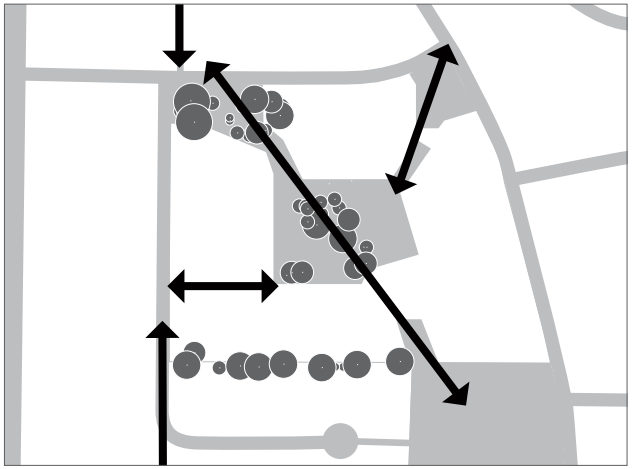
GOVERNANCE

Understanding stakeholders through a robust Community Plan

A community vision for the site shaped through genuine community engagement

Speed to market through streamlined approvals and Australand's experience

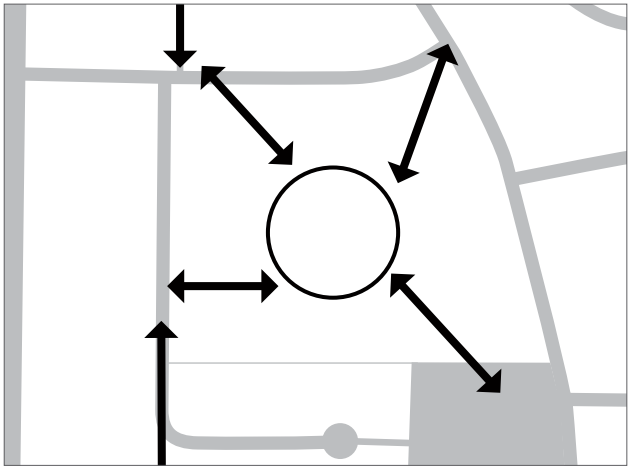
3.2 URBAN DESIGN PRINCIPLES



GREEN LINKS

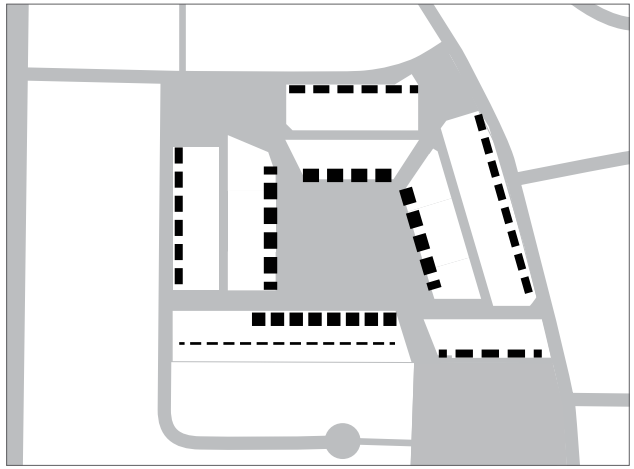
Complementary to the project vision is the notion of 'keeping the green in Greenwood'.

The layout and placement of open space has been predicated by the need to retain trees of high aesthetic, cultural, and environmental value. These trees generally fall within the central park, the north west of the open space, and within private landholdings abutting residential properties to the south. The trees of high retention value located within the residential private landholdings will be protected by ensuring building envelopes do not encroach, through the creation of a 'tree protection zone' which will be incorporated into a future Local Development Plan.



VILLAGE GREEN FOCUS

In accordance with the project vision, the intent is to provide an urban village within the green. The central park becomes the focal point for the village, and creates a distinct community meeting place and local identity. The design's intent is to ensure the green space is open and accessible to the entire Greenwood community.

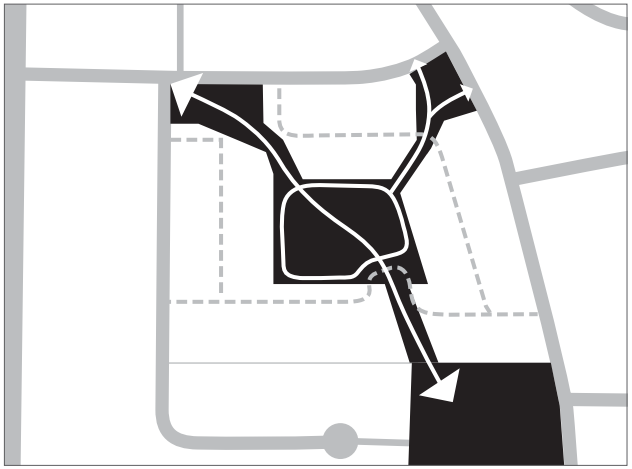


CONTEXT SENSITIVE INTERFACES

Consideration to interface treatments has been paramount to the resultant design. Generally, three key interface conditions have been established, including:

- Adjoining rear boundary to the south and response to abutting residential properties.
- Fronting existing streets.
- Fronting village green directly.

Each requires a context sensitive response, particularly to building height, setbacks, articulation, architecture, landscape and civil engineering.



PEOPLE PLACE

The public open space provision well in excess of what the 10% requirement will create significant community benefits, particularly given the focus on quality and meeting local needs.

Greenwood has been designed for people first and cars second. This is best reflected by the almost completely vehicle free green links through the site, which is made possible by rear lanes. Lanes also enhance the streetscape on external streets. Visitor parking will be provided well in excess of requirements.

BUILT FORM DIVERSITY

The immense housing choice proposed for Greenwood will translate into diverse built form and immersive streetscapes.

A significant variety of housing choices will be available, ranging from 1 bedroom studio apartments to 3 bedroom, two bathroom double storey homes.

PASSIVE SURVEILLANCE

Over 60 dwellings will front the central open space, providing surveillance of this area and adjoining car parking. Defined sight lines and placement of activity in the open space is expected to reduce opportunities for crime. Lanes have been designed in accordance with Liveable Neighbourhoods and each have visible site lines from outside the site. Studio apartments have been placed with the intent of providing surveillance over laneways.

3.3 ILLUSTRATIVE MASTERPLAN

The Illustrative Masterplan is a product of significant community involvement and participation. The masterplan outlines the general intent for the LSP area, based on the aforementioned design principles. High quality architecture and public realm treatments are paramount to the masterplan's success.

Refer Figure 9, 10 and 11.

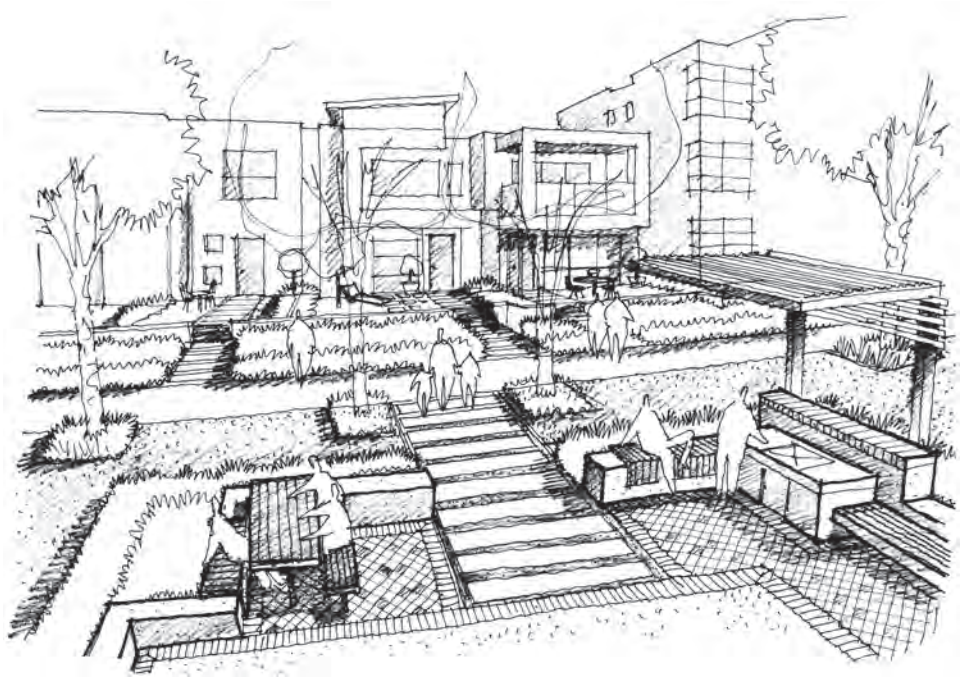


FIGURE 9: ILLUSTRATION OF VILLAGE GREEN

FIGURE 10: ILLUSTRATIVE BUILDING HEIGHTS PLAN

FIGURE 11: ILLUSTRATIVE MASTERPLAN

Key Features

1. Studios above garages provide passive surveillance and housing choice
2. School classroom footprint frames new playground and interpretation of historic uses
3. Deeper lots, double storey housing and retained trees on southern boundary provide buffer to existing housing
4. Variety of seating, including shaded picnic facilities and barbecue
5. More urban two and three storey housing overlooking Village Green
6. Views through lanes for passive surveillance
7. Pinch point designed only for the circulation of garbage trucks. Pedestrian friendly treatment
8. Subtle definition of public / private interface
9. Softening of lanes through pot plants and shrubs
10. Increased front setbacks opposite existing homes
11. Gaps between buildings

3.4 BUILT FORM AND DELIVERY

The three broad target demographics will comprise a wide range of the existing Greenwood community (demographic segments), as shown in figure 12. This mix of household types requires equally diverse housing choices and hence built form outcomes. Up to 20 different housing types are proposed, the variety of which is illustrated in figure 13, including single storey built form (shown faded back) fronting existing homes.

A limited number of three storey apartment buildings frame the central park. The built form is designed in a contemporary architectural style, which provides variation in the street facades and rooflines.

In order to cater for a variety of demographics and household structures, and in the interest of housing affordability and opportunity, the resultant housing product and lots are generally smaller than the established housing stock surrounding the LSP area. In response to this, the design ensures adequate setbacks from the street to create a natural landscape buffer, building upon the green ethos reckoning. Variations in height and architectural style also assist in creating a streetscape that best responds to the established built form and contextual setting.

Refer to Figures 12, 13, 14 and 15.

The concept developed consists of 95-100 lots that accommodates an expected 115-135 dwellings. It is expected the development will provide a place of residence for 250-270 people.

TARGET DEMOGRAPHICS	DEMOGRAPHIC SEGMENTS								
	 MIXED FAMILIES	 PRE-SCHOOL FAMILIES	 PRIMARY, SECONDARY SCHOOL FAMILIES	 PRE-RETIREMENT DOWNSIZER	 SHARED LIVING	 SINGLE PARENTS	 COUPLES	 DIVORCEES	 SINGLES
FAMILIES (Pre-School)	✓	✓	✓		✓	✓	✓	✓	
FIRST HOME BUYERS		✓	✓		✓	✓	✓		✓
DOWNSIZERS				✓	✓			✓	

FIGURE 12: LOCAL TARGET DEMOGRAPHICS AND SEGMENTS

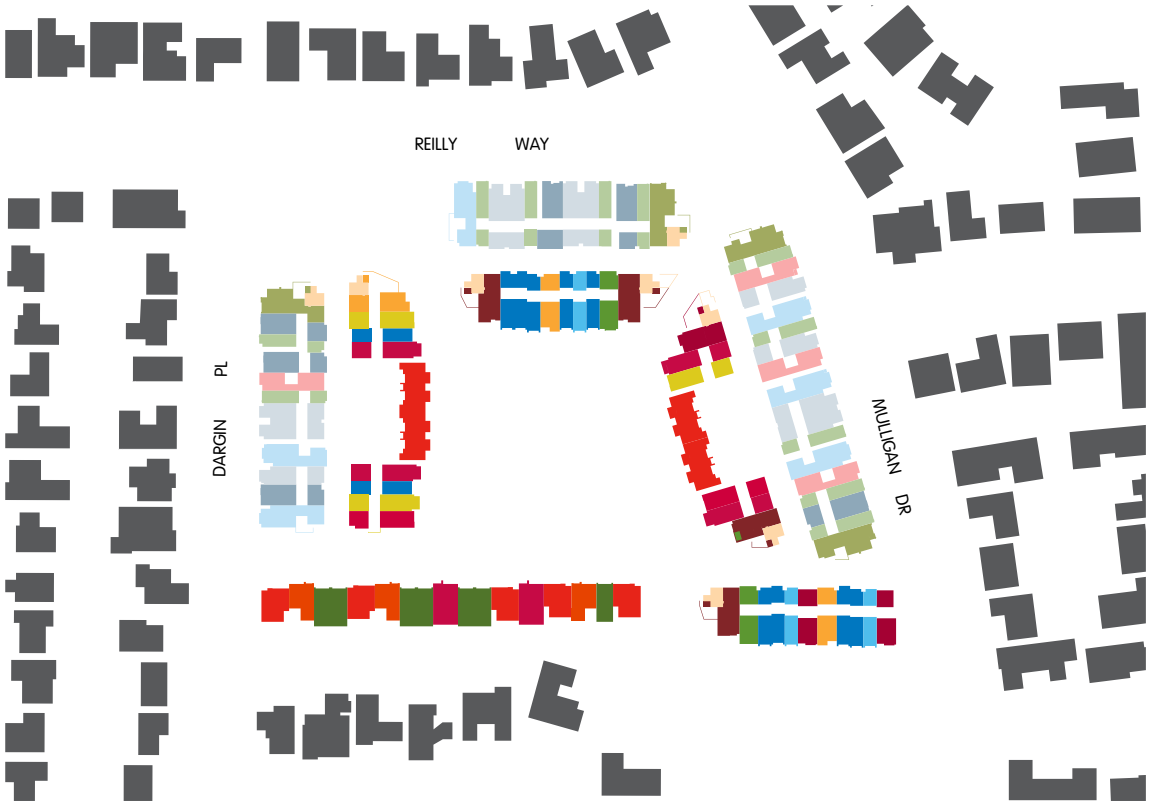


FIGURE 13: BUILT FORM DIVERSITY DIAGRAM. EACH COLOUR REPRESENTS A DIFFERENT HOUSING TYPE, WITH SINGLE STOREY HOUSING FADED BACK.

FIGURE 14: VIEW OF VILLAGE COMMON EDGE WEST

Note: the Landscape shown above is illustrative only with the intent for water wise initiatives to be utilised, as outlined in section 3.14.

FIGURE 15: DARGIN PLACE VIEW

Unlike typical land developments involving multiple builders, this project will be built out completely by the Project Partners. This means that houses, streets and open spaces will be designed and delivered as a completed community. Significant community benefits will result from this approach:

1. FASTER DELIVERY

- Faster construction times minimising disruption to surrounding residents.
- New houses and public open spaces available sooner.
- Entire streetscapes completed quicker; homes, front landscapes and streets built at the same time.

2. BETTER SITE MANAGEMENT AND SAFETY

- Potential impacts of construction parking, noise, safety and traffic all co-ordinated by a single builder.
- A single point of management and contact to keep residents informed about progress and respond to any concerns.

3. MORE CAREFUL RESPONSE TO SITE FEATURES

- A comprehensive approach to existing trees and landform.
- More people-friendly spaces between housing and parks/streets.

4. COMMITMENT TO DELIVER HOUSING CHOICE

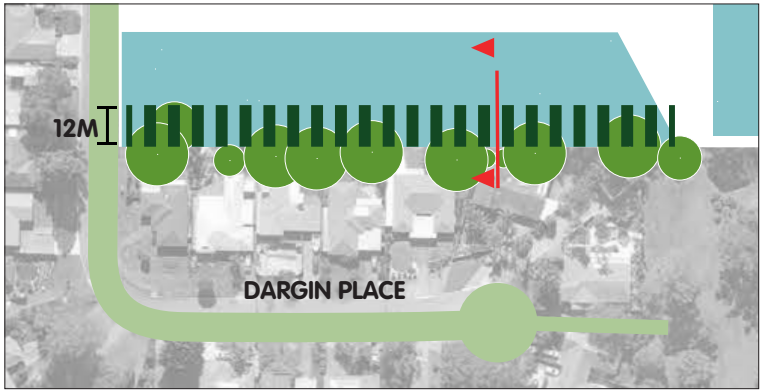
- A mix of specific housing designs that meet community needs, both now and for the future.
- Mostly housing for sale on open market, with some social housing to meet the needs of people on very low incomes.

5. HIGHER QUALITY DESIGN

- Integrated architectural design of entire streetscapes, not just individual homes.
- Control of facades; positioning of windows and treatment of front boundaries.
- Housing and park/street design that looks great and provides facilities for the community.

3.5 INTERFACE WITH ABUTTING RESIDENTIAL

The LSP area is bounded by streets on all sides with the exception of the southern boundary, which abuts existing residential dwellings. Following feedback from the community, the design intent was altered to create a more appropriate interface between the proposed development and the existing residential dwellings. As demonstrated in figures 16 and 17, the use of a 12 metre setback, which preserves existing mature trees of high retention value, will address the interface issues raised by the community. The tree protection zone will be controlled through the provisions of a Local Development Plan, provided at the detailed design phase.



Potentially Priority 1+2 Trees retained

Tree Protection Zone

2 Storey

12M Minimum building setback from rear boundary

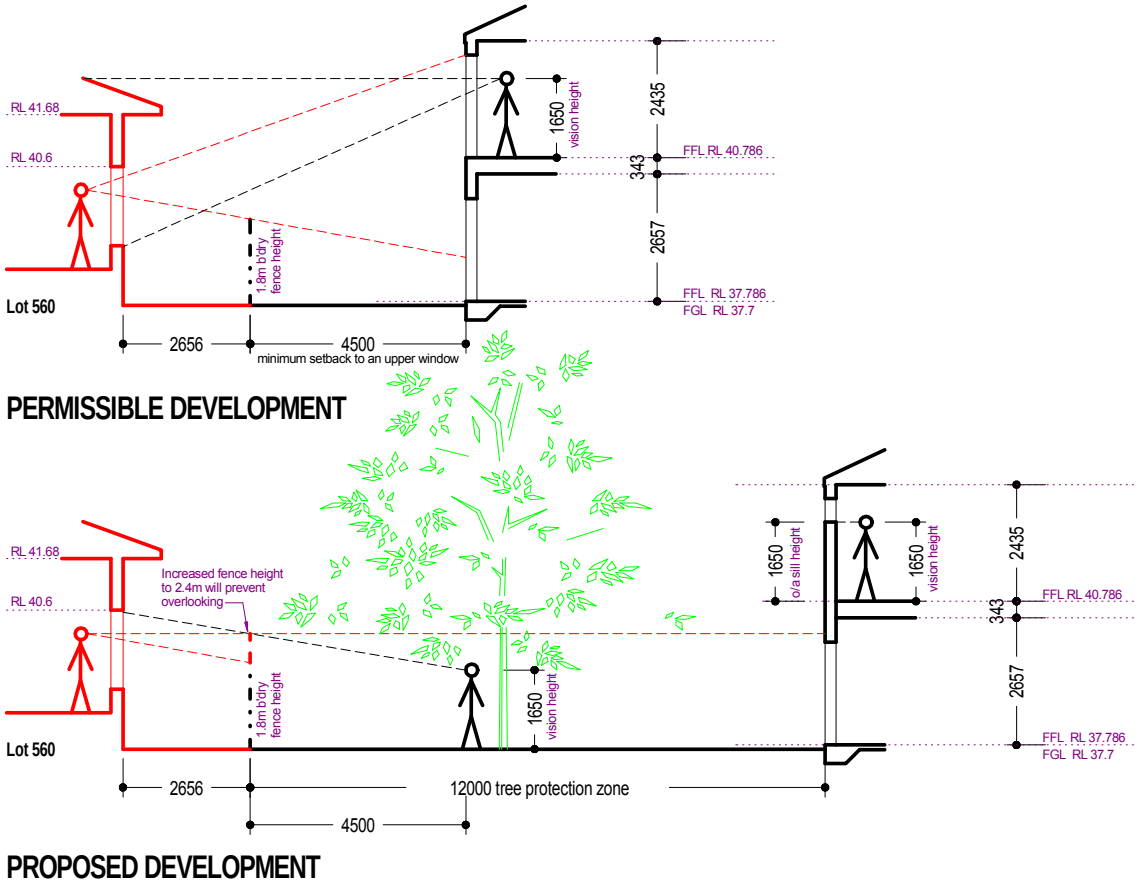
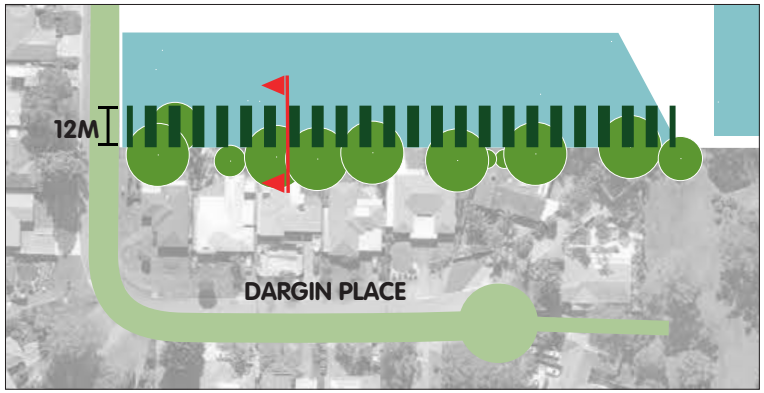


FIGURE 16: EXISTING RESIDENTIAL INTERFACE - SECTION A



Potentially Priority 1+2 Trees retained

Tree Protection Zone

2 Storey

12M Minimum building setback from rear boundary

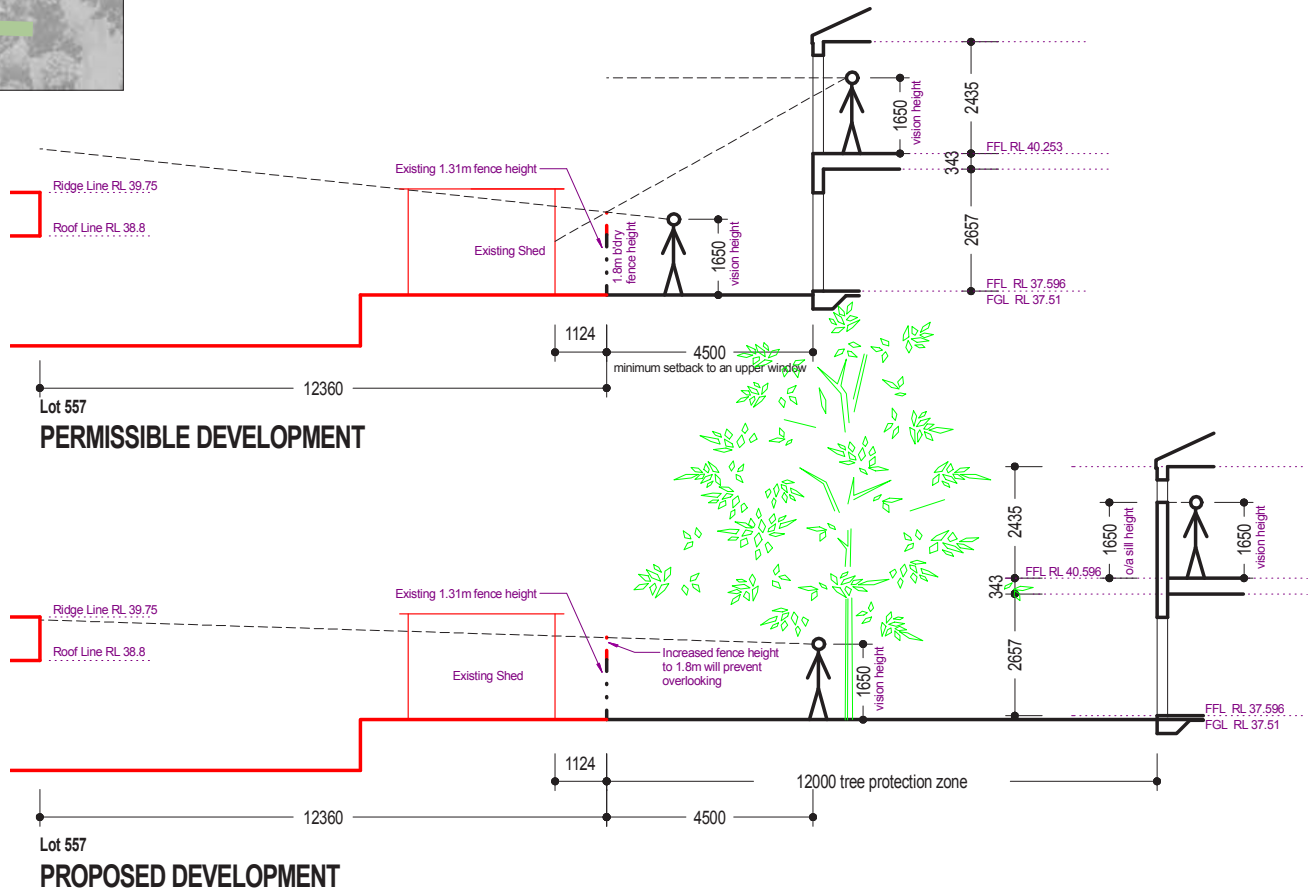


FIGURE 17: EXISTING RESIDENTIAL INTERFACE - SECTION B

3.6 OPEN SPACE AND MANAGEMENT

3.6.1 Open Space Distribution And Calculation

The design and placement of the open space considered the following key elements, identified by the community as being paramount to the developments success:

- Conserve mature trees.
- Implement native planting.
- Open space surrounding the edge of the site.
- Functional parkland with walk trails connected to the existing community and Cockman Park to the south.

Table 5 and 6 provide a breakdown of the open space calculations, in accordance with the WAPC's Liveable Neighbourhoods Operational Policy. The Local Infrastructure and Servicing Strategy (Appendix 8) contains a drainage catchment plan (Appendix B) that depicts indicative stormwater retention basins. The drainage basins shown on the plan relate to the 1 in 5 year storm event. Preliminary engineering calculations indicate that approximately 0.0502 hectares of the stormwater basins will be inundated at the 1 in 1 year storm event (classified as excluded POS, counted as a deduction). The balance of the storm water basins, being 0.0770 hectares, relates to the 1 in 5 year storm event (classified as restricted POS). As only one-fifth of the 10% open space requirement can be classified as 'restricted' (being 0.0763 hectares), 0.0007 hectares is added to the deducted POS. This results in a total of 0.0509 hectares classified as POS deductions.

As demonstrated in tables 5 and 6, a total contribution of approximately 25% open space is proposed for the LSP area, well in excess of the 10% requirement.

Refer to Figure 18, Public Open Space Provision.
Refer Appendix 8, Local Infrastructure and Servicing Strategy.

TABLE 5: PUBLIC OPEN SPACE SCHEDULE

POS Area	Total area (ha)	Unrestricted	Restricted	Excluded
A	0.8291	0.7811	0.0480	0.0322
B	0.1116	0.0896	0.0220	0.0144
C	0.0714	0.0644	0.0070	0.0036
Total	**1.0121**	**0.9351**	**0.0770**	**0.0502**

TABLE 6: PUBLIC OPEN SPACE CALCULATIONS

Local Structure Plan Area		3.8636 ha
Total Net Site Area		3.8636 ha
Deductions		0.0509
Gross Subdivisible Area (GSA)		3.8127 ha
Public Open Space requirement @ 10% of GSA		0.3813 ha
May comprise minimum 80% Unrestricted Open Space		0.3050 ha
May comprise maximum 20% Restricted Open Space		0.0763 ha
Credited Open Space		
POS Area		
A	0.7962	
B	0.0972	
C	0.0678	
Unrestricted Public Open Space		0.8849
Restricted Open Space		0.0763
Total Credited Open Space		0.9612
Total Public Open Space Provision		25.2 %

3.6.2 Tree Protection Zone

Some of the more significant and mature trees that were identified to be of high retention value, both by the community and the Arboriculture Assessment, are proposed to be within private landholdings along the LSP area's southern boundary. The design intent is to utilise the existing vegetation asset as a nature buffer between the existing dwellings to the south of the LSP area and the proposed development. The vegetation will provide a visual buffer to address potential overlooking concerns, and offer amenity and value to the existing and proposed residential dwellings.

To alleviate any concern that the trees retained within private landholdings may be at risk, a 12 metre wide setback zone to new housing the southern boundary abutting the existing residential lots will be created through the provisions of a future Local Development Plan.

FIGURE 18: PUBLIC OPEN SPACE PROVISION

3.7 LANDSCAPE MASTERPLAN AND OPEN SPACE DESIGN

In support of achieving a high quality public realm that resonates with existing and future residents, the surrounding community and other future users of the precinct, a Landscape Master Plan was prepared by Emerge Associates. The landscape approach for the project is focussed on understanding, retaining and responding to community feedback and numerous existing site assets including topography and trees. The design will include references to the sites former school use and its links into the historic surrounding community. The project will build upon the existing streetscape character through materials, plant species, content and scale.

As identified by the Greenwood community and Working Group, the desire to preserve trees of high quality within public open space is paramount to the success of the development in the context of the vision. The location and design of the open space was predicated by the Arboriculture Assessment, which identified trees of medium and high retention value. The design will maintain the majority of these trees, which are located in the central spine and north west corridor of the LSP area.

By doing so, a naturalistic 'green link' has been created, which allows pedestrians and cyclists to traverse through the site. The green link connects Cockman Park to the south with Reilly Way to the north, including the public access way through to Ricketts Way. Native vegetation becomes the central ingredient to the open space composition which is consistent with community aspirations for the site.

The existing trees are a valuable asset to the site, creating immediate impact, shade and reflect the local flora so every effort will be made to retain them where possible. Plant species will be predominantly native species which are low in water use. More specific details on water wise initiatives are discussed in section 3.14.

The central park will become the focal point for the open space, and adjacent built form. Based on the community feedback and Working Group recommendations, a small playground, barbeque area, a shade structure, and nature play opportunities are proposed for the central park. The former school oval has left a level playing field, which is captured within the central and north west parks to provide room for a 'kick-about' area.

The community voiced its desire for the open space to contain a trail and space suitable for walking dogs. The intention is to complement the native vegetation and natural feel through the use of rustic and warmer finishes, such as recycled brick pavers and timber benches.

Finally, the community expressed an aspiration to recognise the former East Greenwood Primary School through interpretive design. Included within the public open space is an open air feature element based on the layout and floor plan of the prior school canteen. The school canteen was a community initiative in raising funding and as such is an important part of the site's past use and the current community's memory. The current proposal is to mimic the floor plan with a series of low seating walls where former building walls were once located with breaks in the proposed low walls where former doorways and windows were once located. The internal area will be devoted to public uses potentially including BBQs, educational seating, signage, low planting, paving, and small play elements.

Notwithstanding the above, any proposal for recreational infrastructure within the open space is subject to a separate development application at the subsequent planning phase, and would be subject to Council approval.

Refer Appendix 3, Arboriculture Assessment
Refer Appendix 7, Landscape Masterplan
Refer to Figure 19, Landscape Masterplan.

Native Verge

Playground & BBQ

Recycled Bricks + Timbers

Dog Walking Trails

FIGURE 19: LANDSCAPE MASTERPLAN






PLANT PALETTE
A SELECTION OF NATIVE PLANTS WILL PROVIDE SEASONAL COLOUR YEAR ROUND

Note: The intention is for low maintenance water wise plants to be utlilized for landscaping throughout, as outlined in section 3.14.

3.8 CRIME PROTECTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

Crime prevention has been identified by the community as an important priority for the project, to ensure the existing high quality integrity of the Greenwood community is retained and protected

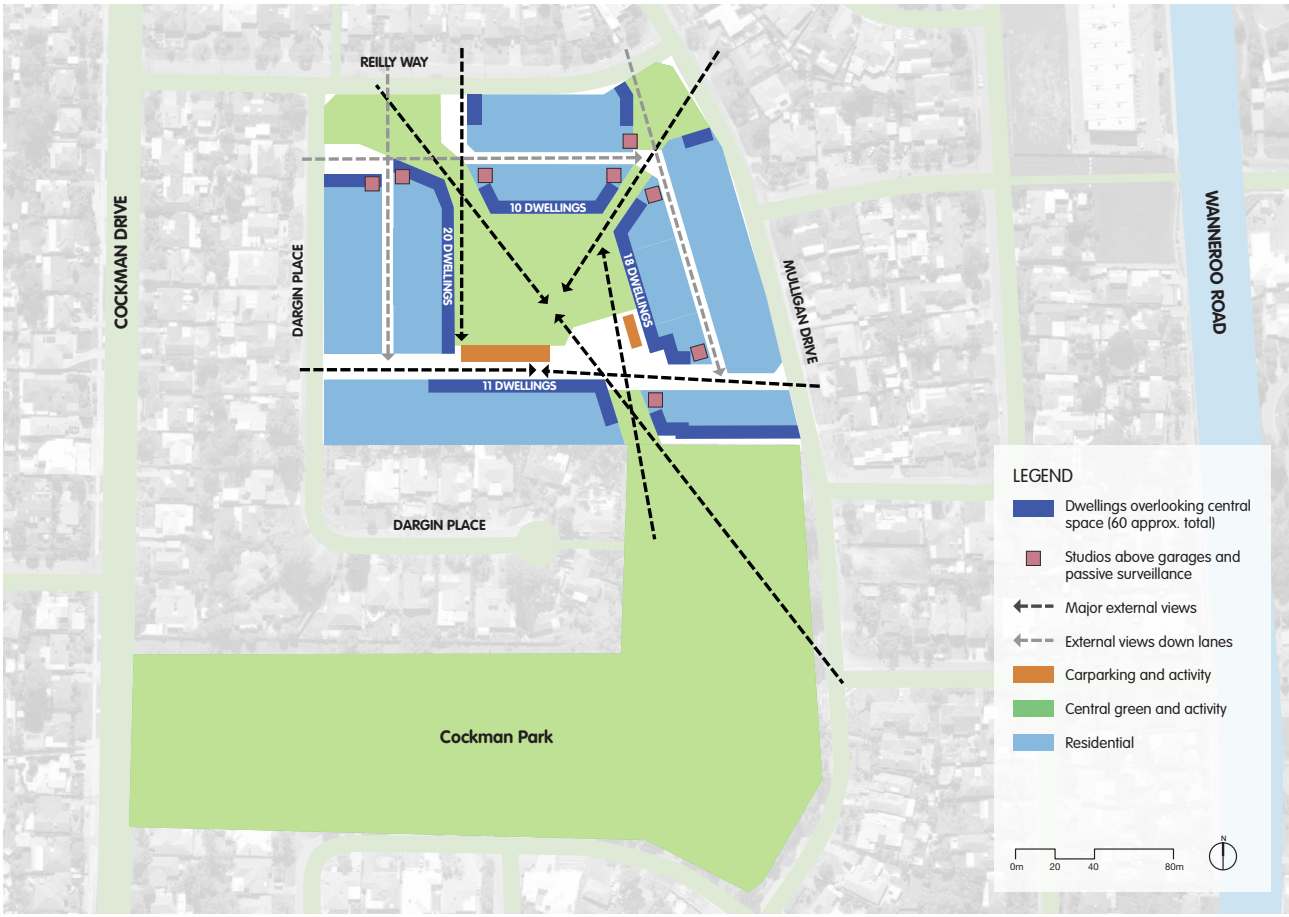
The contribution that environmental design can make to crime prevention and perceived security will be an important element in developing an overall sense of safety in the area. Specifically, the treatment of lighting, encouraging the right types of activity, designing for passive surveillance, and ensuring the design of the public realm reinforces a sense of safety can assist in achieving this outcome.

In excess of 60 dwellings have a direct outlook onto the open space, providing a range of opportunities for passive surveillance by residents of the new development. Additionally, as recommended by Elements 2 and 3 of the WAPC Liveable Neighbourhoods Operational Policy, studio apartments will book-end laneways to provide surveillance opportunities to these spaces.

Visitor and open space car parking has been carefully placed to generate activity that will further mitigate opportunities for crime. The passive design of the open space and green link can ensure that a range of activities will occur through the site.

Refer Figure 20, Passive Surveillance Analysis.

FIGURE 20: PASSIVE SURVEILLANCE ANALYSIS



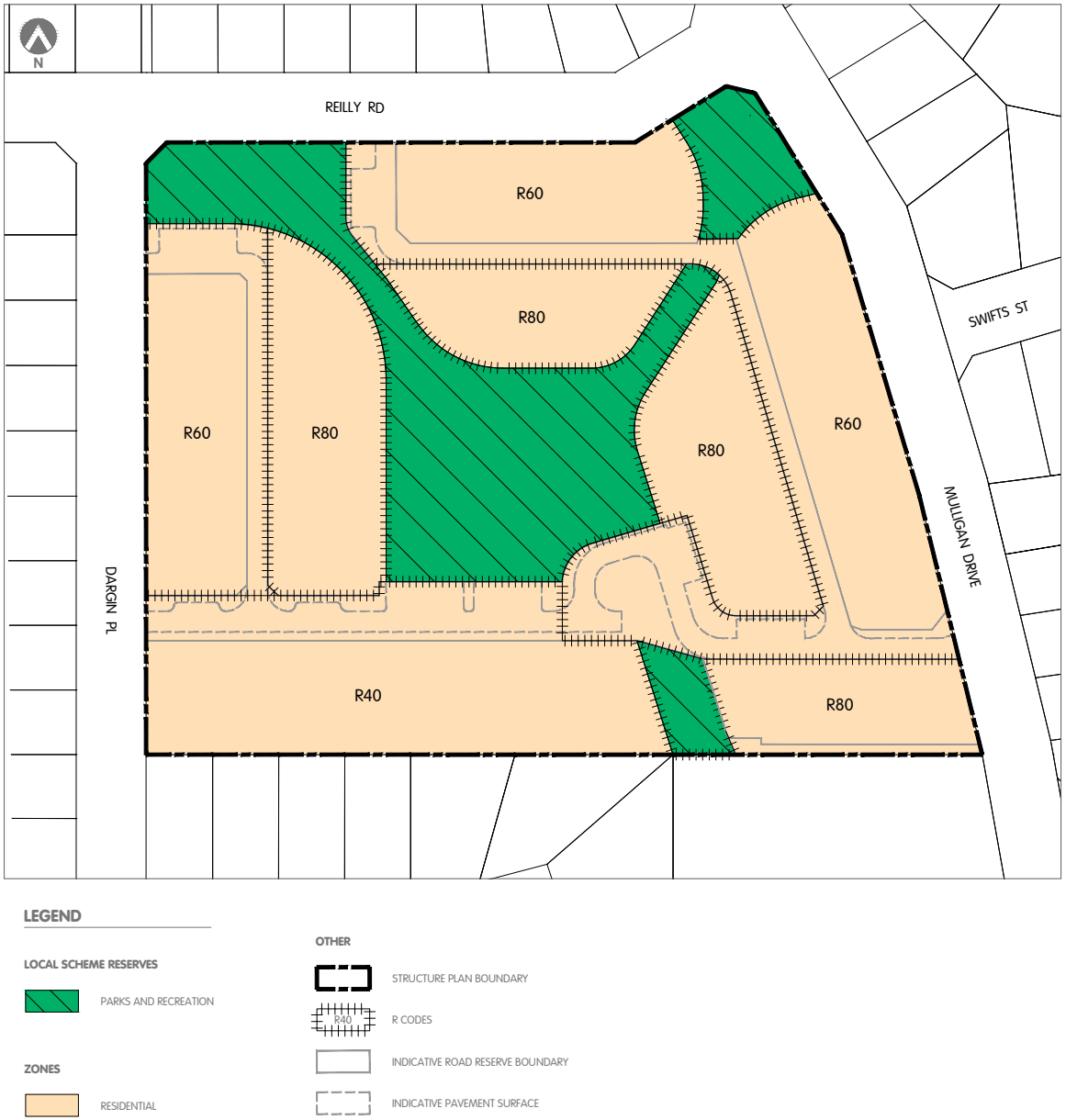
3.9 RESIDENTIAL DENSITY AND HEIGHT

As an outstanding opportunity for infill redevelopment, this project seeks to deliver diversity of housing embracing the potential to develop higher densities than would otherwise occur in a suburban context. Given the inner-middle location of the site in the metropolitan area, a more ambitious density outcome, reinforced by the density targets in Directions 2031 and demographic trends towards smaller households, is advocated by the City's Local Housing Strategy.

Notwithstanding, the intent of the design was to place more of the land in open space, for greater public benefit, than would normally be required. The provision of 25% open space therefore offsets the application of higher densities. This was a design response following a strong emerging theme from the community feedback, that an appropriate interface between the new development and existing built form be implemented.

Refer Figure 21, Local Structure Plan.

FIGURE 21: LOCAL STRUCTURE PLAN



A range of building heights are proposed that respond closely to the context of development immediately surrounding the LSP area. Generally, a mix of single and double storeys proposed towards the edges of the LSP area and interfacing with the existing streetscapes; double storey dwellings are proposed toward the core of the LSP; and some three storey apartment buildings provided in the inner core of the LSP area framing the central park.

Density is applied in accordance with the LSP plan.

The LSP will provide a minimum of 115 residential dwellings, in a mix of housing types and land tenure arrangements.

Refer to Figure 21, Building Heights Plan.

FIGURE 22: BUILDING HEIGHTS PLAN

3.10 LAND TENURE ARRANGEMENTS

Australand will deliver all built form outcomes in partnership with the Department of Housing. The majority of the development will be offered to purchasers as built-strata titles.

The central apartment lots (x4) will sit upon separate freehold (green-title) lots, with built-strata titling for individual units, car parking allocation, and common property.

The studio dwellings will be accommodated on a single freehold lot which contains two built-strata titles – one strata title for the conventional dwelling and associated car parking and storage and one for studio dwelling and associated car parking and storage. The studio dwelling and conventional dwelling contained within the lot will be classified as multiple-dwellings under the R-Codes, to allow for the studio floorspace to be located on top of a garage held in separate ownership.

The public open space will become Crown land vested in the City of Joondalup.

All roads created, including the access lanes, will become Crown land and road reserves.

3.11 EDUCATION FACILITIES

The LSP area is serviced by the Greenwood Primary School, which is a combination of the former East Greenwood Primary School and Allenswood Primary School. Greenwood Primary School is approximately 750 metres west of the LSP area. Additionally, the Marangaroo Primary School is approximately 750 metres east of the LSP area, but outside the school's 'intake area' as defined by the Department of Education.

In Semester 2 of 2014, the Department of Education's database listed 327 enrolled students for Greenwood Primary School, with a capacity for 465 students. Capacity is likely to be further expanded when grade 7 students transition to secondary education facilities in 2015.

The LSP area is serviced by the Warwick Senior High School, located approximately 1.0 kilometre to the south. In Semester 2 of 2014, Warwick Senior High School had 491 students enrolled, down from a 576 students in 2010.

The availability of education facilities is considered sufficient to adequately service proposed development.

3.12 EMPLOYMENT

The LSP area is 17 kilometres north of the Perth city centre and 9.5 kilometres south of the Joondalup city centre. Both provide substantial employment opportunities and are accessible via the existing road network and Greenwood Train Station with connecting services.

The LSP area is in between the major strategic employment areas of Wangara, 2.6 kilometres to the north, and Balcatta, 3.5 kilometres to the south.

The LSP area is within the Kingsway Shopping Centre retail and employment catchment. Kingsway Shopping Centre is approximately 800 metres to the north east of the LSP area. A small light industrial precinct is located 400 metres north of the LSP area, on the corner of Wanneroo Road and Hepburn Avenue.

The availability of employment services is considered sufficient to adequately service a residential infill development of this nature.

Refer to Figure 2, Local Context Plan

3.13 STREETS AND MOVEMENT

This section has been informed by the Transport Impact Assessment (Appendix 6).

3.13.1 Movement network hierarchy

The LSP has been designed to prioritise pedestrian and cycle movements, allowing residents to move through the site and to access services offered within the broader locality, including transport. This has been achieved through the creation of the green link that ensures pedestrian encounters with LSP roads are minimised.

The LSP integrate with the existing local street network, and creates 13 metre road reserves (access streets) and 6 metre access lanes as depicted in the street network plan. The effective width of the access lanes will be between 8m and 10 metres achieved through garage setbacks. This will create a larger space for landscaping and amenity. The rationale behind this is for the setback areas to be maintained by private landowners as opposed to creating a maintenance burden for the City of Joondalup.

The existing road network hierarchy can be described as follows:

Street	Classification	Carriageway width	Pedestrian path
Cockman Road	Distributor B	9.4 metres (2m median)	One side only – 1.2 metres
Mulligan Drive	Access Road	7.2 metres	One side only – 1.2 metres
Gorman Road	Access Street	9.8 metres (1.8m median)	One side only – 1.2 metres
Reilly Way	Access Street	7.2 metres	One side only – 1.2 metres
Dargin Place	Access Street	7.2 metres	One side only – 1.2 metres

Refer to Figure 23, Movement Network Hierarchy Plan.

FIGURE 23: MOVEMENT NETWORK HIERARCHY PLAN

FIGURE 24: TYPICAL LANE CHARACTER

FIGURE 25: STREET SECTION (ACCESS STREET D MINIMUM WIDTH)

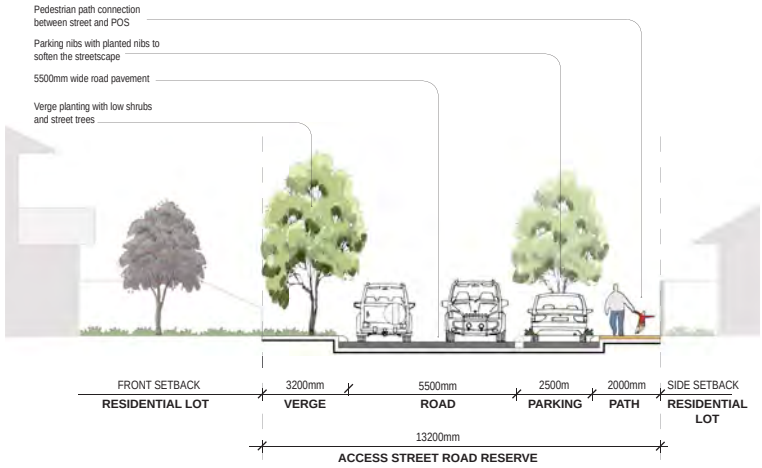
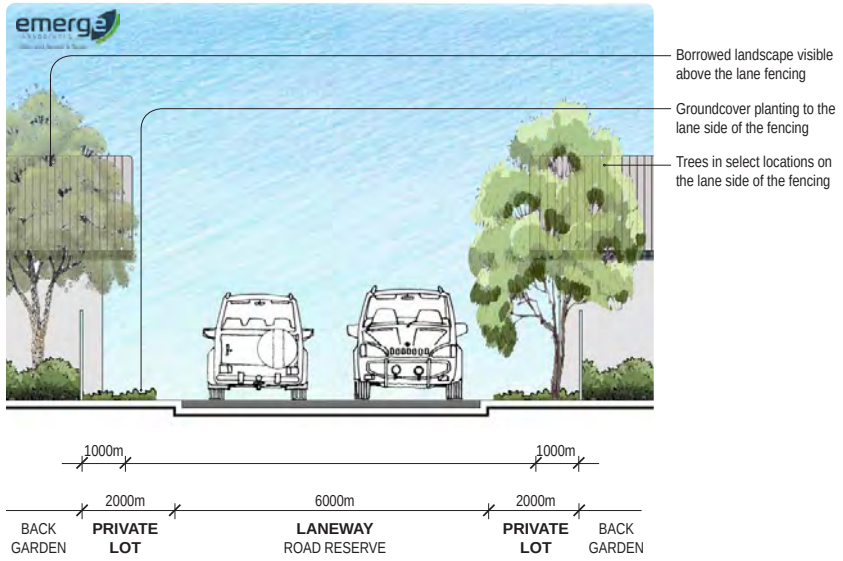


FIGURE 26: TYPICAL LANE SECTION



3.13.2 Pedestrian

The pedestrian network will provide a high level of accessibility and connectivity for pedestrians within the LSP area including connections to major external nodes. The relatively low traffic volumes on the existing surrounding street network and the estimated volumes for the proposed street network will allow pedestrians to safely and easily navigate the development crossing streets as desired.

3.13.3 Cycling

Shared paths will replace existing footpaths on external streets, connecting with the existing and proposed bicycle network. Recreational cycling has been planned for within the proposed green link and open space. Due to the low levels on anticipated traffic on the proposed street network, and the design that encourages traffic calming, cycling can also be safely accommodated on the proposed streets and lanes.

3.13.4 Public transport

Transperth bus service 447 and its bus stops on Cockman Road are within 400 metres of the LSP area. Transperth bus services 389 and 450 and its bus stops are located on Wanneroo Road, within 600 metres walking distance to the east of the LSP area.

Refer to Figure 24, 25, 26 and 27.

FIGURE 27: PEDESTRIAN & CYCLING OPPORTUNITIES PLAN

3.13.5 Private vehicles and traffic

The access system has been developed carefully to share traffic generated from the LSP area between the surrounding streets and intersections. In terms of volume, traffic estimates predict a total of 670 daily vehicular trips be generated from the development, including 63 trips during the PM peak weekday period. By comparison, the former school use generated approximately 742 total daily vehicular trips. Accordingly, the existing and proposed local road network will be able to support traffic generated from the proposed development.

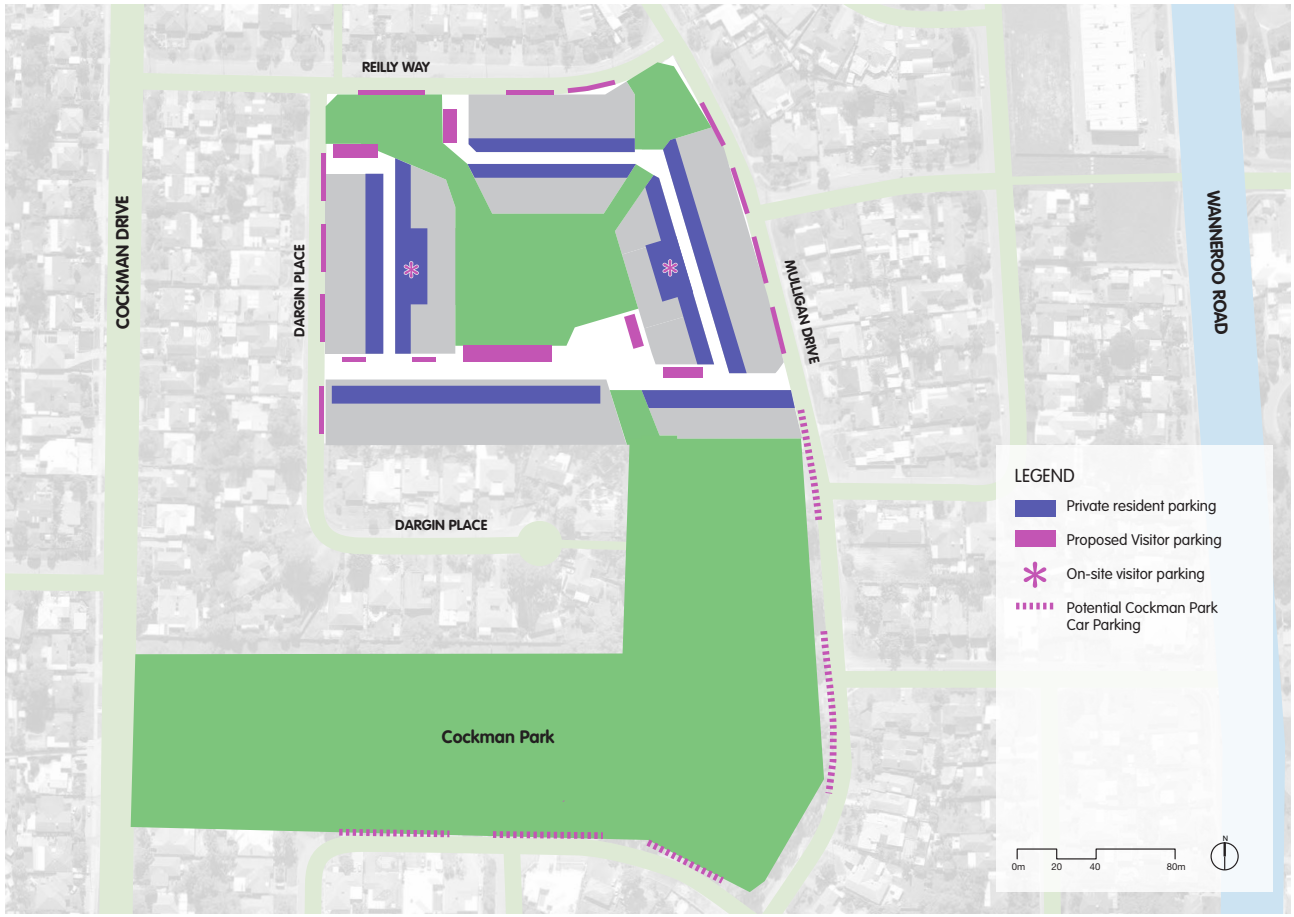
Refer Appendix 6, Traffic Impact Assessment.

3.13.6 Parking

All household car parking will be accommodated on-site within individual private land holdings. Visitor car parking is located to service the proposed dwellings and to provide opportunities for surveillance. The concept design provides car parking well in excess of the one visitor parking bay per four dwellings that would be required if the site works built out for a grouped dwelling (survey-strata) development.

Refer to Figure 28, Parking.

FIGURE 28: PARKING



3.14 WATER MANAGEMENT

In developing the storm water drainage design the intention is to incorporate appropriate Water Sensitive Urban Design and drainage best management practices for storm water and nutrient management at the site. This is to ensure there will be no unacceptable impacts on the existing local drainage infrastructure or the environment and that the site is protected from flooding.

Water wise processes for consideration at detail design stage of the process and subject to Council approvals may include water wise planting species, hydrozoned irrigation, use of rain sensors and water meters, use of alternate hardscape materials, minimized turf areas, use of low loss irrigation nozzles, soil amendments, porous surface treatments, additional mulching, storm communal bores, third pipe irrigation for private areas, water harvesting and reuse where viable.

One of the advantages of providing higher densities within the LSP area is that it allows for larger areas to be allocated for open space, creating sound opportunities for infiltration and retention on-site through permeable surfaces. This will be accomplished by utilising current best urban water practices within the development. Water for irrigation will be undertaken to promote cost effective water efficient practices through the open space designs.

The drainage design indicates a series of smaller catchments with a range of treatments including subsurface storage located under parking areas and smaller planted swales to capture and treat 1:1 flood events. 1:5 and 1:10 events may spill into open grass areas and will be held back from residential lots via slope and raised pad sites. The 1:100 drainage event will be managed off site via various head works.

3.15 INFRASTRUCTURE COORDINATION, SERVICING AND EARTHWORKS

3.15.1 Site Works

Demolition of the primary school buildings occurred between May and June 2011. While the surface of the site has been remediated, it is possible that undiscovered services, buried fences or similar may be present. As such, unexpected finds protocols are recommended as part of the construction works. Additionally, it is recommended that a forward works scope is implemented to reduce the risk of cross contamination for any existing services uncovered during the civil works process.

Refer Appendix 8, Servicing Strategy.

3.15.2 General earthworks

The site will be earthworked with the intent to minimise import fill requirements, improve lot accessibility and maximise the retention of trees. Construction of retaining walls are required tp ensure level building sites with specific planning and engineering consideration to minimise walls of significant height i.e. greater than 3m. Stair access will also be provided where required for lots with rear laneway access and fronting public open space.

A construction management plan, required as part of the subsequent detailed design application phase, will outline the intention and scope for the proponent to organize waste collections during the different stages of construction.

Refer Appendix 8, Servicing Strategy.

3.15.3 Infrastructure coordination and servicing

Wastewater
The LSP area is capable of being serviced by the existing reticulated sewer infrastructure, subject to the appropriate headworks charges and negotiations through the Water Corporation.

Water Supply
The LSP area is capable of being serviced by the existing reticulated water infrastructure, subject to the appropriate headworks charges and negotiations through the Water Corporation.

Power Supply

The LSP area is capable of being serviced by power infrastructure through Western Power, the service provider. In accordance with Western Power policy, all new development will need to be serviced by underground three phase power. As such, some of the existing infrastructure immediately surrounding the LSP area may need to be converted to the underground system.

Gas Supply

The LSP area is capable of being serviced by the existing gas supply infrastructure, subject to the appropriate headworks charges and negotiations through ATCO Gas.

Telecommunications

The proposed development subject of this LSP falls within the Australian Government's National Broadband yield criteria, which aims to reticulate communication assets to all new developments over 100 lots. There may be some specific easements that will need to be considered at the detailed design stage.

Stormwater

The LSP area has excellent infiltration qualities, of which the design takes advantage of spatially through the application of large open space areas. As such, The LSP area is capable of accommodating the majority of stormwater onsite. Stormwater will generally be accommodated in a series of basins, where infiltration is not possible.

Refer Appendix 8, Servicing Strategy.

3.16 DEVELOPER CONTRIBUTION ARRANGEMENTS

No extraordinary provisions are planned for in relation to development contributions. The proposal is likely to attract the standard requirements typical of a development of this nature.

3.17 IMPLEMENTATION

3.17.1 Further documentation and management plans

To facilitate subdivision and development of the land, further studies and/or management plans are to be prepared, as applicable, to the satisfaction of the relevant authority as outlined in Table 6.

TABLE 6: FURTHER DOCUMENTATION AND ACTIONS

Documentation	Approval Stage	Approving Authority
Local Development Plan/s (for all lots)	Lodged prior to building permit stage, managed as a condition of subdivision approval.	City of Joondalup
Urban Water Management Strategy	Lodged prior to building permit stage, managed as a condition of subdivision approval.	City of Joondalup; Department of Water

3.17.2 Land assembly

The site subject of this LSP is ready for development and owned by the proponent for these purposes.

3.17.3 Indicative staging

The LSP area will generally be delivered in either one or two stages, depending on market demand. The intention is deliver the development with as little interruption and impact the surrounding community as possible. Given the ample space the site offers, it is considered that development will be able to achieve this with relative ease, subject to the appropriate management measures being in place at the detailed design phase.

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LOCATION PLAN

The City of Joondalup District Planning Scheme No. 2 and Residential Design Codes (R-Codes) are varied as shown on the plan and outlined below:

1. This Local Development Plan (LDP) sets out variations to the R-Codes that constitute deemed-to-comply development and do not require neighbour consultation and subsequent planning approval, if fully compliant with the provisions outlined.
2. Any variations to the deemed-to-comply provisions, as outlined in this LDP and R-Codes, may be approved through the building permit application process, if any proposed variations are adequately justified to the satisfaction of the City of Joondalup.
3. All dwellings are to orientate toward the Primary Frontage as shown on the plan.
4. Deemed-to-comply clause 5.1.2 C2.1 iii. of the R-Codes does not apply to this LDP, meaning primary street setbacks shall apply a minimum distance, not an average.
5. Lots designated as "Apartment Dwelling required above a Garage" shall be assessed as Mutliple Dwellings under Part 6 of the R-Codes, with consideration of the following:
   a. For lots designated as a maximum building height of 1 storey, a total height of 2 storeys will be permitted for the Apartment Dwelling only, inclusive of any garage / storage area below.
6. Ancillary Dwellings may be provided on any lot, up to a total maximum of 5 lots within the LDP area. Ancillary Dwellings will be assessed in accordance with the standard provisions outlined within clause 5.5.1 of the R-Codes, with this LDP varying the following standards:
   a. The minimum site area stipulated in deemed-to-comply clause 5.5.1 C1 i. of the R-Codes does not apply.
   b. For lots designated as a maximum building height of 1 storey, a total height of 2 storeys will be permitted for the Ancillary Dwelling only, inclusive of any garage / storage area below.
7. For 2 storey buildings, deemed-to-comply clause 5.1.3 C3.1 i. of the R-Codes does not apply, with the permissible building height of walls built up to the boundary to be a maximum of 7 metres, where the length of the wall is not an assessment consideration.
8. For 3 storey buildings, deemed-to-comply clause 5.1.3 C3.1 i. of the R-Codes does not apply, with the permissible building height of walls built up to the boundary to be a maximum of 10.5 metres, where the length of the wall is not an assessment consideration.
9. For corner lots, primary building frontages will be designed to wrap the corner within the general area designated on the plan as "Secondary Frontage Building Articulation", requiring buildings to address both frontages through the use of one or more architectural features including windows/openings, verandahs/porches/balconies, alternative materials, and/or relief in building mass.
10. Lots affected by the "Secondary Storey Highlight Windows" provision will have no windows below the height of 1650mm above the second storey finished floor level, for the elevation facing south.

LEGEND

- Local Development Boundary
- Proposed Lot Boundaries
- Building Height : 1 Storey
- Building Height : 2 Storey
- Building Height : 3 Storey
- Garage Doors may span 70% of the Building Frontage
- Secondary Storey Highlight Windows
- Apartment Dwelling required above a Garage
- Primary Frontage
- Secondary Frontage Building Articulation
- 1.8m High Wall or Fence Treatment
- Vehicle Access Only Permitted Where Designated
- 1.0m Minimum Building Setback
- Habitable Room Window Orientation
- Tree Protection Zone

The development guidelines as shown have been adopted by Council and signed by the Principal Planner.

.....

Manager Planning Services

Date.....

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1:1000 SIZE A3 0 metres 10 20 30 40 50

REV	DESCRIPTION	YYMMDD	DRAWN	APPR'D
G	TEXT MODS	150309	RF	AB
F	TEXT AND LEGEND MODS	150306	RF	AB
E	TEXT AND LEGEND MODS	150305	RF	AB
D	PLAN UPDATES	150204	RF	AB
C	TEXT MODS	150128	RF	AB
B	TEXT MODS	150123	RF	AB
A	BASE PLAN	150121	RF	AB

GREENWOOD LOCAL DEVELOPMENT PLAN

63 Mulligan Drive, Greenwood

City of Joondalup

REF NO.	DRAW NO.	REV.
AST GRE	**RD1 400**	**G**

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ATTACHMENT 4

GREENWOOD

LOCAL STRUCTURE PLAN

JULY 2015

Government of **Western Australia**
Department of **Housing**

OPENING DOORS
To Affordable Housing

australand

A member of
FRASERS CENTREPOINT

CONTENTS

PART ONE STATUTORY SECTION

1.0 STRUCTURE PLAN AREA 10

2.0 STRUCTURE PLAN CONTENT 10

3.0 INTERPRETATION AND SCHEME RELATIONSHIP 10

4.0 OPERATION 10

5.0 LAND USE AND SUBDIVISION REQUIREMENTS 10

5.1 Land Use Permissibility 10

5.2 Residential 10

5.2.1 Dwelling Target 10

5.2.2 Density 11

5.3 Public Open Space 11

5.4 Conditions of Subdivision Approval 11

6.0 DEVELOPMENT REQUIREMENTS 11

6.1 Local Development Plans 11

6.2 Residential Design Codes Variations 11

6.3 Building Heights 11

PART TWO EXPLANATORY SECTION

1.0 PLANNING BACKGROUND 14

1.1 Introduction 14

1.1.1 Purpose 14

1.1.2 Background 14

1.2 Land Description 16

1.2.1 Regional Context 16

1.2.2 Local Context 16

1.2.3 Area and Land Use 18

1.2.4 Legal Description and Ownership 18

1.3 Planning Framework 19

1.3.1 Zoning and Reservations 19

1.3.2 Planning strategies and policies 20

1.3.3 Relevant Approvals, Recent Decisions and Pending Framework Changes 22

2.0 SITE CONDITIONS AND CONSTRAINTS 23

2.1 Biodiversity and Natural Area Assets 23

2.2 Landform and Soils 24

2.2.1 Landform 24

2.2.2 Soils 25

2.2.3 Acid Sulfate Soils 25

2.3 Groundwater and Surface Water 25

2.4 Water Management and Conservation 25

2.5 Bushfire hazard 25

2.6 Heritage and Site History 26

2.7 Existing and Surrounding Community 27

2.8 Community Consultation 28

2.8.1 Overview 28

2.8.3 Community Ideas Day and Public Consultation Period 29

2.8.4 Greenwood East Working Group 30

2.8.5 Key Outcomes from Community Consultation Process 30

CONTENTS

3.0 LAND USE AND SUBDIVISION REQUIREMENTS 33

3.1 Sustainable Development Outcomes 33

3.2 Urban Design Principles 34

3.3 Illustrative Masterplan 36

3.4 Built Form and Delivery 38

3.5 Interface with abutting residential 42

3.6 Open space and management 44

3.6.1 Open Space Distribution And Calculation 44

3.7 Landscape masterplan and open space design 46

3.8 Crime protection through environmental design (CPTED) 48

3.9 Residential Density and Height 49

3.10 LAND TENURE ARRANGEMENTS 51

3.11 Education facilities 51

3.12 Employment 52

3.13 Streets and movement 52

3.13.1 Movement network hierarchy 52

3.13.2 Pedestrian 54

3.13.3 Cycling 54

3.13.4 Public transport 54

3.13.5 Private vehicles and traffic 55

3.14 Water management 56

3.15 Infrastructure coordination, servicing and earthworks 56

3.15.1 Site Works 56

3.15.2 General earthworks 56

3.15.3 Infrastructure coordination & servicing .. 57

3.16 Developer contribution arrangements 57

3.17 Implementation 57

3.17.1 Further documentation and management plans 57

3.17.2 Land assembly 58

3.17.3 Indicative staging 58

PART THREE TECHNICAL APPENDICES

Appendix 1: Pre-Lodgement Consultation Summary

Appendix 2: Consultation Plan

Appendix 3: Arboriculture Assessment

Appendix 4: Environmental Summary Report

Appendix 5: Geotechnical Report

Appendix 6: Traffic Impact Assessment

Appendix 7: Landscape Masterplan

Appendix 8: Local Infrastructure and Servicing Strategy

CERTIFIED THAT AGREED STRUCTURE PLAN ...../20.....

WAS ADOPTED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON.....

.....
Chairman, Western Australian
Planning Commission

AND BY

RESOLUTION OF THE COUNCIL OF THE CITY OF JOONDALUP ON .....

AND THE SEAL OF THE MUNICIPALITY WAS PURSUANT TO THE COUNCIL'S RESOLUTION HEREUNTO AFFIXED IN THE PRESENCE OF:

.....
Mayor, City of Joondalup

.....
Chief Executive Officer, City of Joondalup

TABLE OF MODIFICATIONS

Modification no.	Description of modification	Date endorsed by Council	Date endorsed by WAPC

EXECUTIVE SUMMARY

Item	Data	Section number referenced within the structure plan report
Total area covered by the structure plan	3.8636 hectares	Part 2 Section 1.2.4
Area of each land use proposed: _Residential _Industrial _Commercial	 3.0393 hectares 0 0	Part 2 Section 3.6.1
Estimated lot yield	95-100 lots	Part 2 Section 3.4
Estimated number of dwellings	115 - 135 dwellings	Part 2 Section 3.4
Estimated population	250-270 people	Part 2 Section 3.4
Number of high schools	0	Part 2 Section 3.11
Number of primary schools	0	Part 2 Section 3.11
Estimated area of open space	25%	Part 2 Section 3.6.1

This Local Structure Plan report has been prepared on behalf of Australand and the Department of Housing, the sentiment is understood, however the City remains the assessing body of the structure plan, in order to accommodate urban residential development on the former East Greenwood Primary School site. The LSP establishes a layout for the local road network, residential development sites and open spaces that is coordinated and integrated with surrounding development.

The strategic intent of the project is for the Department of Housing, working in partnership with the private sector, to deliver a showcase infill development that leverages from the strengths of each party. This will provide the East Greenwood community with a result that not only delivers a diversity of housing options for a range of incomes but also adds value to its existing surrounds.

The Department of Housing welcomes this partnership with Australand as an opportunity to give the people living, working and contributing to the East Greenwood community, new housing stock that meets their needs – from downsizers to first home buyers – and does so in a way that encourages them to explore and connect with the enhanced amenities that the development will provide.

The Local Structure Plan design is the result of a rigorous pre-lodgement community consultation process, involving a Community Idea's Day, a community feedback submission period, the establishment of a Community Working Group, and the opportunity to share and interact by way of a dedicated social media Facebook page. A total of 966 comments were received through these processes, with the Community Working Group, comprised of 12 active members, contributing to the ultimate design and decision making process.

The project team responsible for the preparation of this Local Structure Plan are:

- RobertsDay; Town Planning and Urban Design.
- Australand; Development Partner, Building Design and Construction Manager.
- Department of Housing; Developer and Proponent.
- Community Working Group; Strategic Advice and Guidance.
- RPS; Environmental Consultants.
- Emerge; Landscape and Water Management.
- Transcore; Transport Engineers.
- JDSI; Servicing Engineers.

PART ONE
STATUTORY SECTION

PART ONE: STATUTORY SECTION

1.0 STRUCTURE PLAN AREA

The provisions of the Local Structure Plan (LSP) apply to Lot 9867 (63) Mulligan Drive, Greenwood being the land contained within the inner edge of the line denoting the Structure Plan boundary on the Structure Plan Map (Plan 1).

2.0 STRUCTURE PLAN CONTENT

The LSP comprises three parts;

a. Statutory Section (Part 1);

b. Explanatory Section (Part 2); and

c. Appendices – Technical Reports.

3.0 INTERPRETATION AND SCHEME RELATIONSHIP

Unless otherwise specified in this part, the words and expressions used in the LSP shall have the respective meanings given to them in the City of Joondalup District Planning Scheme No. 2 (the Scheme) including any amendments gazetted thereto.

Pursuant to clause 9.8 of the Scheme:

a. The provisions, standards and requirements specified under Part 1 of this LSP shall have the same force and effect as if it were a provision, standard or requirement of the Scheme. In the event of there being any variations or conflict between the provisions, standards and requirements of this LSP, then the provisions, standards and requirements of this LSP shall prevail.

b. Any other provision, standard and requirement of Part 1 of the LSP that is not otherwise contained in the Scheme, shall apply to the land as though it is incorporated into the Scheme, and shall be binding and enforceable to the same extent as if part of the Scheme.

c. Part 2 of this LSP and the Appendices – Technical Reports are to be used as reference only to clarify and guide interpretation and implementation of Part 1.

4.0 OPERATION

In accordance with clause 9.8.1 of the Scheme, this Structure Plan shall come into operation when it is certified by the Western Australian Planning Commission (WAPC) pursuant to subclause 9.6.3 of the scheme.

5.0 LAND USE AND SUBDIVISION REQUIREMENTS

The LSP Map (Plan 1) outlines land use, zones, and reserves applicable within the LSP area.

The zones and reserves designated under this LSP apply to the land within it as if the zones and reserves were incorporated into the Scheme.

5.1 LAND USE PERMISSIBILITY

Land use permissibility within the Structure Plan areas shall be in accordance with the corresponding zone or reserve under the Scheme.

5.2 RESIDENTIAL

5.2.1 Dwelling Target

a. Objective:
To provide a minimum of 115 dwellings within the LSP area.

b. Subdivisions to achieve the following:
Density in accordance with the Residential Density Code depicted on the Structure Plan Map (Plan 1).

5.2.2 Density

Plan 1 defines the residential density code that applies to specific areas within the Local Structure Plan.

5.3 PUBLIC OPEN SPACE

Public open space shall be provided across a minimum of 10% of the LSP area. Public Open Space is to be provided generally in accordance with Plan 1.

5.4 CONDITIONS OF SUBDIVISION APPROVAL

At the time of subdivision the following conditions may be recommended, as applicable, requiring preparation and/or implementation of the following strategies:

i. Urban Water Management Plan (City of Joondalup; Department of Water)

6.0 DEVELOPMENT REQUIREMENTS

6.1 LOCAL DEVELOPMENT PLANS

Local Development Plans are to be prepared in accordance with clause 9.12 of the Scheme, prior to any subdivision and/or development, for all lots subject of the LSP area (Plan 1).

6.2 RESIDENTIAL DESIGN CODES VARIATIONS

Table 1 sets out variations to the Residential Design Codes that constitute deemed-to-comply development within the Structure Plan area and which do not therefore require approval under the Scheme. Local Development Plans may grant further variations to the Residential Design Codes, subject to City of Joondalup approval.

TABLE 1_ RESIDENTIAL DESIGN CODE VARIATIONS

	Open Space Min total (% of site)
R40	As per R-Codes
R60	25 %
R80	25 %

6.3 BUILDING HEIGHTS

The City of Joondalup Local Planning Policy: Height and Scale of Buildings Within Residential Areas does not apply to the LSP.

Building Heights are in accordance with any Local Development Plan prepared under section 6.1 of the LSP and clause 9.12 of the Scheme.

great places_
robertsday.com.au
planning·design·place

1:1000 SIZE A3 0 metres 10 20 30 40 50

REV	DESCRIPTION	YYMMDD	DRAWN	APPR'D
H	MODS TO LEGEND WORDS	150731	ED	AB
G	REMOVE R-CODE BOUND.	150709	ED	AB
F	PLAN UPDATE	150618	RF	ED
E	CONSISTENT W/- SCHEME	150306	ED	AB
D	ROAD CARRIAGEWAY	141211	RF	AB
C	TREE PROTECTION ZONE	141204	ED	AB
B	ROAD CARRIAGEWAY	141201	RF	AB
A	BASE PLAN	141119	RF	AB

LOCAL STRUCTURE PLAN
Greenwood
City of Wanneroo

REF NO. **AST GRE** DRAW NO. **RD1 200** REV. **H**

DISCLAIMER: ISSUED FOR DESIGN INTENT ONLY. ALL AREAS AND DIMENSIONS ARE SUBJECT TO DETAIL DESIGN AND SURVEY

PART TWO
EXPLANATORY SECTION

PART TWO: EXPLANATORY SECTION

1.0 PLANNING BACKGROUND

1.1 INTRODUCTION

1.1.1 Purpose

This Local Structure Plan (LSP) has been prepared to facilitate residential development of the former East Greenwood Primary School site at 63 Mulligan Drive, Greenwood.

The purpose of the explanatory section of the LSP report is to provide background on the design of the LSP; an overview of features on the site and its context; indicative design of the ultimate urban form; compliance with relevant planning requirements; and details for project implementation. In particular, the LSP report demonstrates how the design has been formulated based on a concerted community consultation and feedback process.

Technical reports, contained in Part Three, are summarised in this part also.

1.1.2 Background

The land subject of this LSP has a rich history dating back to 1972 when the suburb of Greenwood was originally subdivided by the Parin family. At this time, the site was designated for educational use by the State Government, with the East Greenwood Primary School built to service residents of the Greenwood locality.

In June 2007 the Department of Education and Training (DET) advised the City of Joondalup that the East Greenwood Primary School was surplus to its requirements and of its intention to collocate it with the services provided at Allenswood Primary School. The DET also announced that it intended to sell the site to the Department of Housing (DoH) for the purposes of providing an innovative development catering for a range of housing needs including, social housing, affordable rental and home ownership options. In 2009 the DET initiated a scheme amendment with the City of Joondalup to rezone the land from Public Purposes to Urban Development. The rezoning was gazetted in December 2010.

The primary school ceased operating in September 2010 and the buildings were subsequently demolished and removed in May and June 2011.

A contract for sale was executed in 2011 and the DoH sought a private sector development partner by way of an Expression of Interest Process. Australand was awarded the tender to partner with DoH in July 2013.

Refer Figure 1, Aerial Photograph.

PART TWO: EXPLANATORY SECTION

FIGURE 1: AERIAL PHOTOGRAPH

1.2 LAND DESCRIPTION

1.2.1 Regional Context

Regionally, the LSP area is approximately 17 kilometres north of the Perth city centre and situated within the Greenwood locality. The LSP area is approximately 7.0 kilometres east of Hillarys Boat Harbour, and 9.5 kilometres south of the Joondalup city centre.

The LSP area is within the City of Joondalup municipality.

1.2.2 Local Context

Locally, the LSP area is approximately 680 metres south of Lake Goollelal and 750 metres north of Warwick Open Space. The LSP area is approximately 580 metres south of Hepburn Avenue, 260 metres west of Wanneroo Road, and 670 metres north of Warwick Road. The Mitchell Freeway is approximately 2.5 kilometres to the west of the LSP area.

The LSP area is bounded by Dargin Place to the west, Reilly Way to the north, and Mulligan Drive to the east. Cockman Park shares part of the site's southern boundary. The heavily vegetated park contributes to Greenwood's character and amenity, but contains limited facilities.

The LSP area is serviced by the Greenwood Primary School, which is a combination of the former East Greenwood Primary School and Allenswood Primary School. Greenwood Primary School is approximately 750 metres west of the LSP area. Additionally, the Marangaroo Primary School is approximately 750 metres east of the LSP area, but outside the school's 'intake area' as defined by the Department of Education. In Semester 2 of 2014, the Department of Education's database listed 327 enrolled students for Greenwood Primary School, with a capacity of 465 students. Capacity is likely to be further expanded when grade 6 and 7 students transition to secondary education facilities in 2015.

The Kingsway Shopping Centre services the broader Greenwood locality from a retail and employment standpoint, and is approximately 800 metres north east from the LSP area. Warwick Leisure Centre services the broader Greenwood locality, and is approximately 860 metres south of the LSP area.

Bus services currently run along Cockman Road, approximately 150 metres to the west of the LSP area, and Wanneroo Road, approximately 300 metres to the east. Transperth Bus Service 447 operates on Cockman Road and connects the LSP area with Warwick Station to the south and Whitfords Station to the north. Transperth Bus Services 389 and 450 operate on Wanneroo Road and connect the LSP area with Warwick Station, the Perth CBD, and the Wanneroo City Centre to the north. Greenwood Train Station is located approximately 3 kilometres west of the LSP area, and has a 'Park and Ride' facility. The public transport services connect the LSP area with the broader Perth Metropolitan Region.

Refer Figure 2, Local Context.

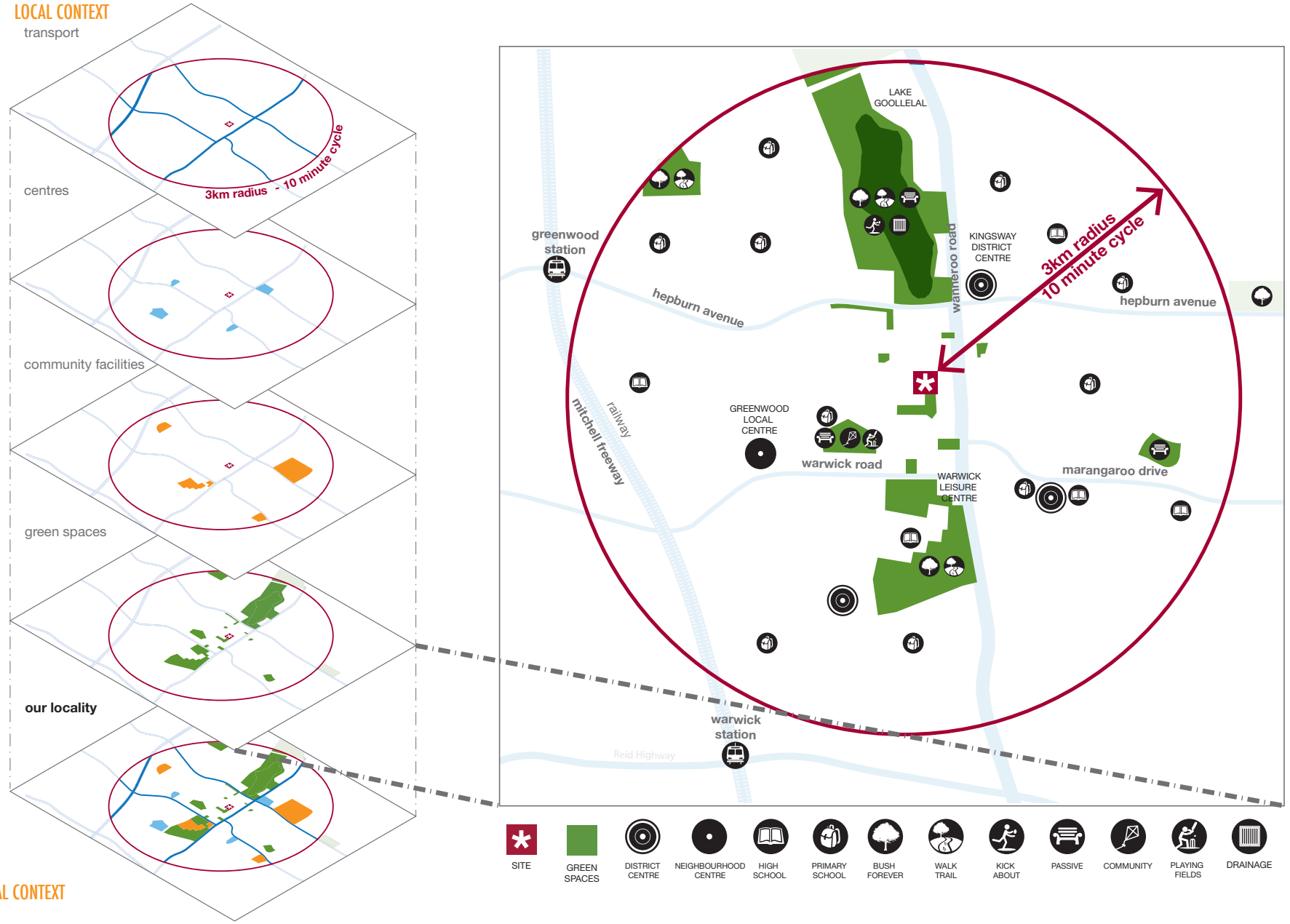


FIGURE 2: LOCAL CONTEXT

1.2.3 Area and Land Use

The Greenwood locality is typically characterised by low-density single detached residential dwellings. Some examples of grouped dwelling duplex developments exist and are scattered throughout the locality. Small-scale vehicle orientated commercial uses are located on Wanneroo Road, approximately 150m east of the site.

Cockman Park is the home of Perth Disc Golf Club, accommodating a '9 basket' course. The school car park was historically utilised by disc golfers, being located near the 'first basket' to the south east of the site.

Following demolition of the buildings and structures associated with the former school use in mid 2011, the LSP area has been left vacant. Unfettered pedestrian access to the LSP area has existed since this time. Community feedback suggests that the site has been mostly used for dog walking and disc golf parking.

The LSP area has large cleared areas of planted lawn with stands of parkland cleared trees, predominantly to the north west and central areas of the site.

The topography of the LSP area is generally uniform with the gradient slightly decreasing from approximately 37.6m AHD (Australian Height Datum) in the site's south-west to a minimum of approximately 33.4m AHD in the north-east and north west corners.

1.2.4 Legal Description and Ownership

The LSP area involves one lot as detailed in Table 1 below.

TABLE 1: LAND DETAILS

Lot no.	Street Address	CT Volume-Folio	Deposited Plan no.	Area
9867	63 Mulligan Drive, Greenwood	2741-295	47280	3.8636 ha

1.3 PLANNING FRAMEWORK

1.3.1 Zoning and Reservations

1.3.1.1 Metropolitan Region Scheme

Under the provisions of the Metropolitan Region Scheme (MRS) the LSP area is zoned 'Urban'.

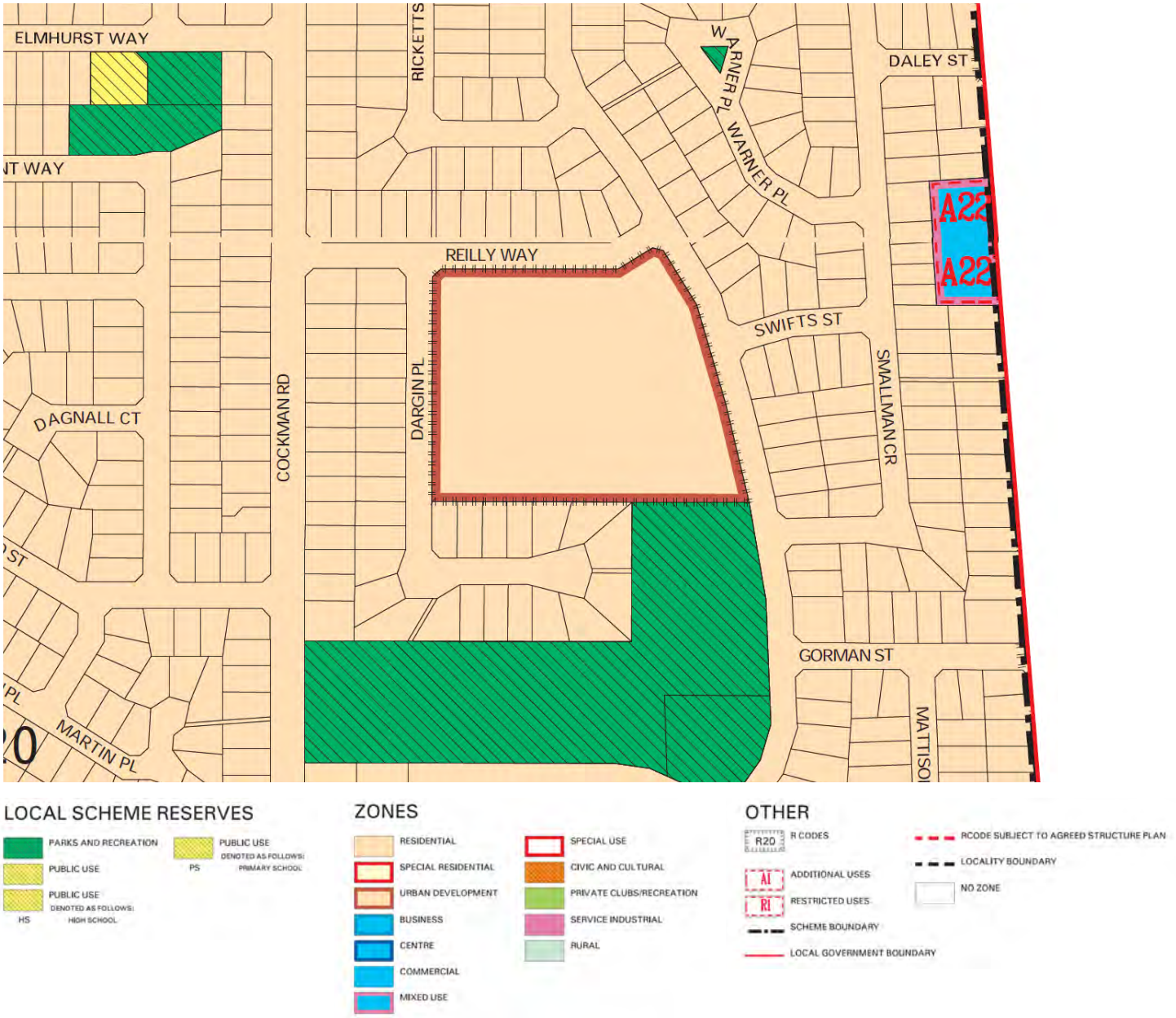
1.3.1.2 City of Joondalup

Under the provisions of the City of Joondalup District Planning Scheme No. 2 (DPS2) the LSP area is zoned 'Urban Development'. Land subject to an Urban Development zone may not be developed or subdivided unless it is in accordance with an endorsed structure plan.

The LSP area is generally surrounded by land zoned 'Residential' with an applicable density code of 'R20'. Cockman Park, immediately abutting the LSP area to the south, is reserved for 'Parks and Recreation' under DPS2.

Refer Figure 3, DPS2 zoning map.

FIGURE 3: DPS2 ZONING MAP



1.3.2 Planning strategies and policies

1.3.2.1 Directions 2031 and Beyond

Directions 2031 and Beyond (Direction 2031) provides the State with a strategic plan and spatial framework for the metropolitan Perth and Peel region. Directions 2031 establishes a vision for future urban growth, addressing population growth and land use patterns with a view to accommodating a projected increase of more than half a million people in Perth and Peel by 2031. Further, the strategy recognises that planning for the Perth and Peel region will need to accommodate 3.5 million people by 2056 almost doubling the current population.

Directions 2031 proposes a strong role for urban infill and consolidation to accommodate this increase in population, and identifies the importance of established suburbs in contributing to meeting this demand.

1.3.2.2 Draft Outer Metropolitan Perth Sub-Regional Strategy

The Draft Outer Metropolitan Perth Sub-Regional Strategy (Sub-Regional Strategy) provides further guidance for the outer metropolitan regions, categorised into four growth sub-regional areas. The LSP area falls within the North-West Sub-regional Area, which comprises the Wanneroo and Joondalup municipalities.

The Sub-Regional Strategy recognises that the City of Joondalup has limited capacity to provide growth in unconstrained land, as many former greenfield land banks have now been developed. As such, the focus shifts to infill and redevelopment opportunities in order to satisfy the identified need to accommodate a further 167,400 dwellings within the North-West Sub-regional Area. More specifically, the Sub-Regional Strategy recommends that 12,700 dwellings can be provided in infill areas within the Joondalup municipality. A function of the development of the LSP area will be to contribute to this infill dwelling target.

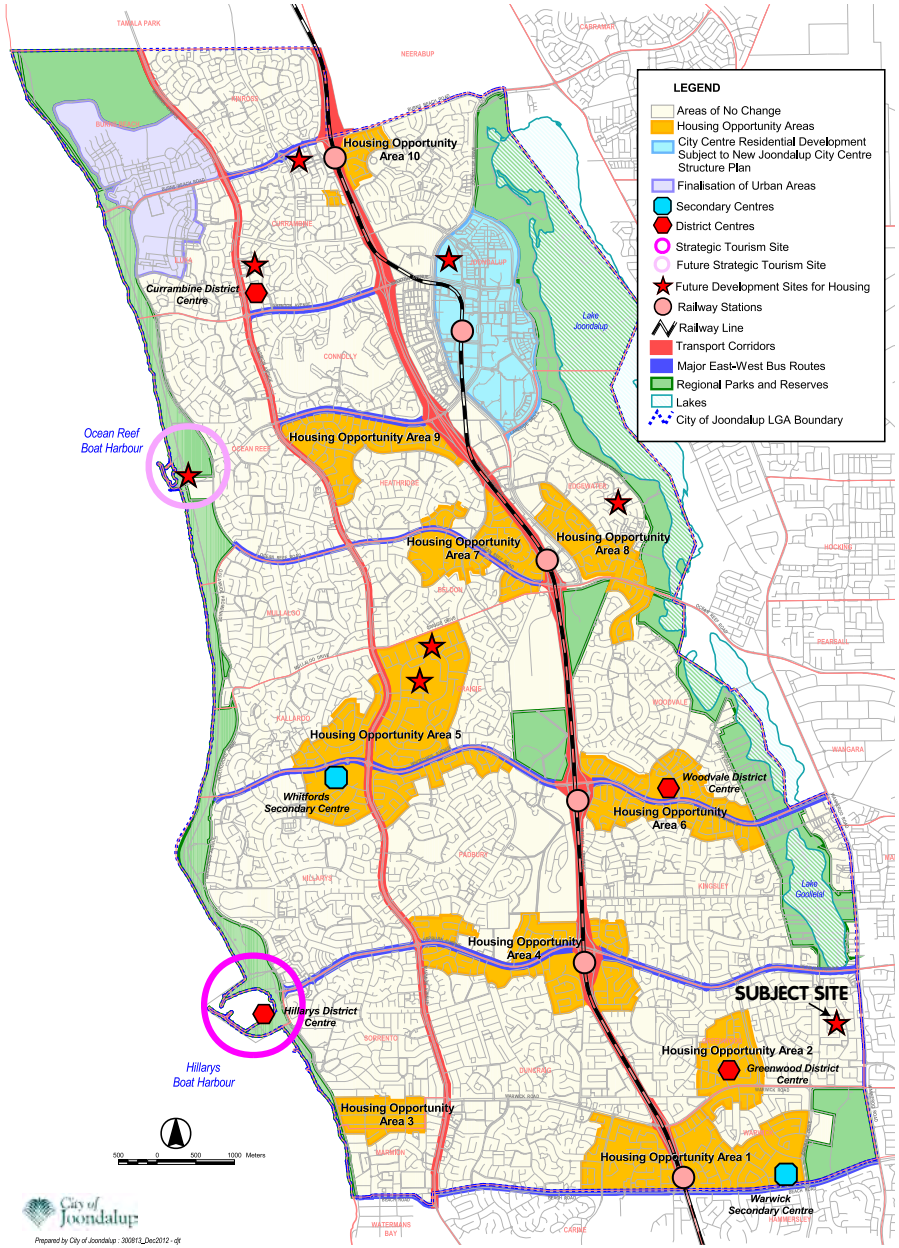
1.3.2.3 State Planning Policy No. 3: Urban Growth and Settlement

State Planning Policy No. 3: Urban Growth and Settlement (SPP3) applies to the whole of the State in promoting sustainable and well planned settlement patterns that have regard to community needs and are responsive to environmental conditions. The objectives and principles of Directions 2031 and Liveable Neighbourhoods are enshrined in this Policy.

SPP3 recognises that the majority of new development in metropolitan Perth has been in the form of low density suburban growth. This form of development intensifies pressure on valuable land and water resources; imposes costs in the provision of infrastructure and services; increases the dependence on private cars; and creates potential inequalities for those living in the outer suburbs where job opportunities and services are limited.

Accordingly, the Greenwood LSP, which provides a consolidated urban form, while delivering amenity and reducing car dependence, is consistent with the framework stipulated in SPP3.

FIGURE 4: CITY OF JOONDALUP LOCAL HOUSING STRATEGY



1.3.2.4 City of Joondalup Local Housing Strategy

The City of Joondalup Local Housing Strategy reviewed the existing housing stock and density in the City to identify opportunities to meet its Direction 2031 target of 12,700 dwellings in infill areas only. The study presented a number of key findings relevant to the LSP area, including:

Key findings

- Changing household structure will place pressure on current/existing housing supply. Providing a greater range of housing products will not only help alleviate these pressures but also go some way towards providing housing which is more affordable for singles, young couples, and the aged.
- The two factors of an ageing population and falling household sizes will be the key drivers influencing the size, direction and composition of the housing market in the City of Joondalup.
- The housing products currently available in the City do not reflect the emerging demographic trends predicted for the City. It is imperative to ensure a balanced mix of housing to avoid a mis-match between housing demand and supply.
- Limited 'land bank' opportunities for future housing exist within the City. In order to cater for future demands it is necessary to provide housing in infill areas.
- A high standard of redevelopment in infill areas will have a positive impact on streetscapes and residential amenity.
- More compact housing should be provided in order to deliver a wider range of housing to meet the social and economic needs of changing demographics in the City.
- Recognises the ability of larger 'opportunity sites' to provide a new compact form of development which will alleviate pressure from existing low density suburban areas, where it is desirable to maintain this density to accommodate family living arrangements.

Recommendation 7 of the Local Housing Strategy emphasises the need for larger "opportunity sites" to deliver a 'target' density in accordance with the State Government policy framework. Following the strategic direction set by the State in Directions 2031, the intent is for "opportunity sites" to achieve a minimum average density of 25 dwellings per site hectare. This target is to ensure the broader objective of Directions 2031, being 15 dwellings per gross urban hectare, is achieved.

The LSP area is explicitly identified as a 'Future Development Site for Housing' under the Local Housing Strategy, which falls within the "opportunity site" description as referenced in the above Key Findings summary.

Refer Figure 4, City of Joondalup Local Housing Strategy.

1.3.2.5 City of Joondalup Height and Scale of Buildings within Residential Areas Policy

The City's Height and Scale of Buildings within Residential Areas Policy (Height Policy) stipulates a maximum height limit of 8.5 metres, with the exception of minor projections such as air conditioning units, pergolas, screens etc. At the time of writing, following concerns raised in the recently adopted Local Housing Strategy, the City is reviewing the Height Policy with a view of increasing the maximum limit for opportunity sites. Notwithstanding, Local Development Plans provide the City with the opportunity to modify height limits.

1.3.3 Relevant Approvals, Recent Decisions and Pending Framework Changes

1.3.3.1 Relevant Ministerial Announcements

2007 – Minister for Education and Training announces plans to decommission the East Greenwood Primary School site and sell the site to the DoH for the purposes of urban development.

2010 – Minister for Housing announces that the DoH would seek to "deliver an innovative solution with a private sector partner and intends to engage the market through an Expression of Interest Process… with a preferred partner to be selected in August 2011. The partner will ensure the development comprises social housing, affordable rental and home ownership options."

1.3.3.2 Proposed Amendment No 73 to DPS2

Proposed Amendment No 73 to DPS2 (Amendment 73) will implement the majority of the recommendations made in the City's Local Housing Strategy. Relevant to the LSP area, Recommendation 7 of Amendment 73 states:

"It is proposed that a minimum residential density of 25 dwellings per site hectare be required for the development of lots one hectare or greater within the 'Residential' zone, as well as for development within the 'Urban Development' zone where a structure plan is required to be prepared. "

At the time of writing, the City is conducting a public consultation period with the final submission date being 10 December 2014. Amendment 73 would require the endorsement of the WAPC and subsequent final approval from the Minister of Planning prior to gazettal.

2.0 SITE CONDITIONS AND CONSTRAINTS

2.1 BIODIVERSITY AND NATURAL AREA ASSETS

The former primary school use on the LSP area has informed the structure and composition of the site's environmental and landscape features, which consist primarily of large cleared areas of planted lawn with stands of parkland cleared trees. Remnant vegetation exists surrounding the pad sites of the former primary school buildings and oval. The eastern side of the LSP area, which served the purpose of the former oval playing field is generally cleared and flat.

The LSP area is not affected by any statutory environmental listings of significance.

An environmental assessment was conducted to identify potential fauna species that may inhabit the site. It was concluded that the existing trees in the LSP area may be visited opportunistically by native birds moving through the Joondalup landscape. However, the assessment considered it unlikely that the trees would be used exclusively by native fauna species on a permanent basis.

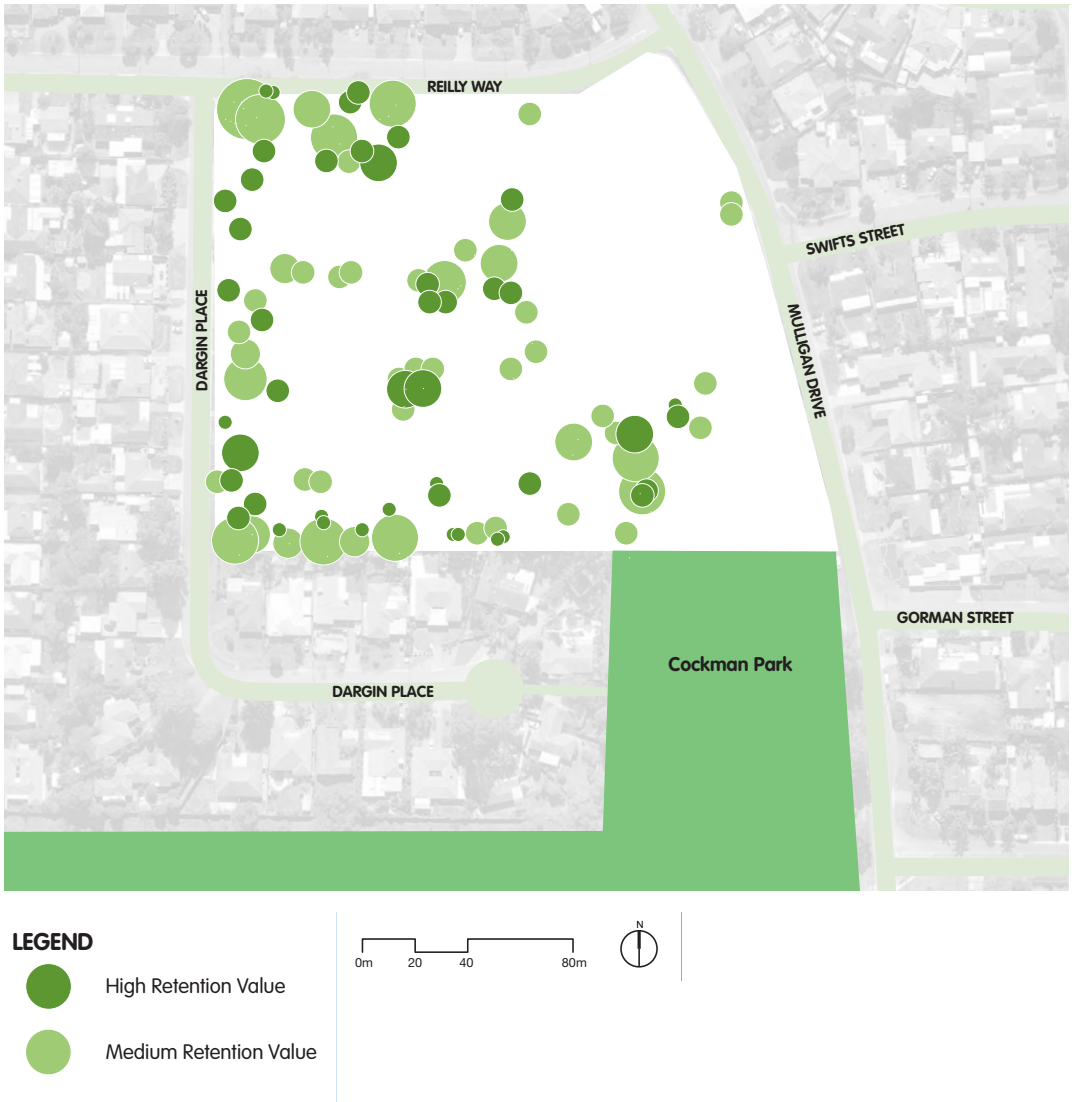
The majority of scattered trees on the site are jarrah, marri, and coastal moort. A tree assessment was conducted by a specialist arboriculturist to identify trees worthy of retention. The assessment considered the health, structure, and species suitability. Generally, trees of significance are contained within the central spine, north-east corner of the LSP area, and with southern boundary abutting the existing residential landholdings.

The environmental overview makes the following key recommendation for the LSP area:

Retain the remnant native trees (through a combination of placing urban development in cleared land and the retention of trees eg. In POS and road reserves etc.)

Refer Figure 5, Trees of Notable Value.

FIGURE 5: TREES OF NOTABLE VALUE



Refer Appendix 3, Arboriculture Assessment.

2.2 LANDFORM AND SOILS

The Environmental Summary Report (Appendix 3), Geotechnical Report (Appendix 4) and Local Infrastructure Servicing Strategy (Appendix 6) have been used to inform this section.

Generally, the landform and soils are conducive to the accommodation of urban development.

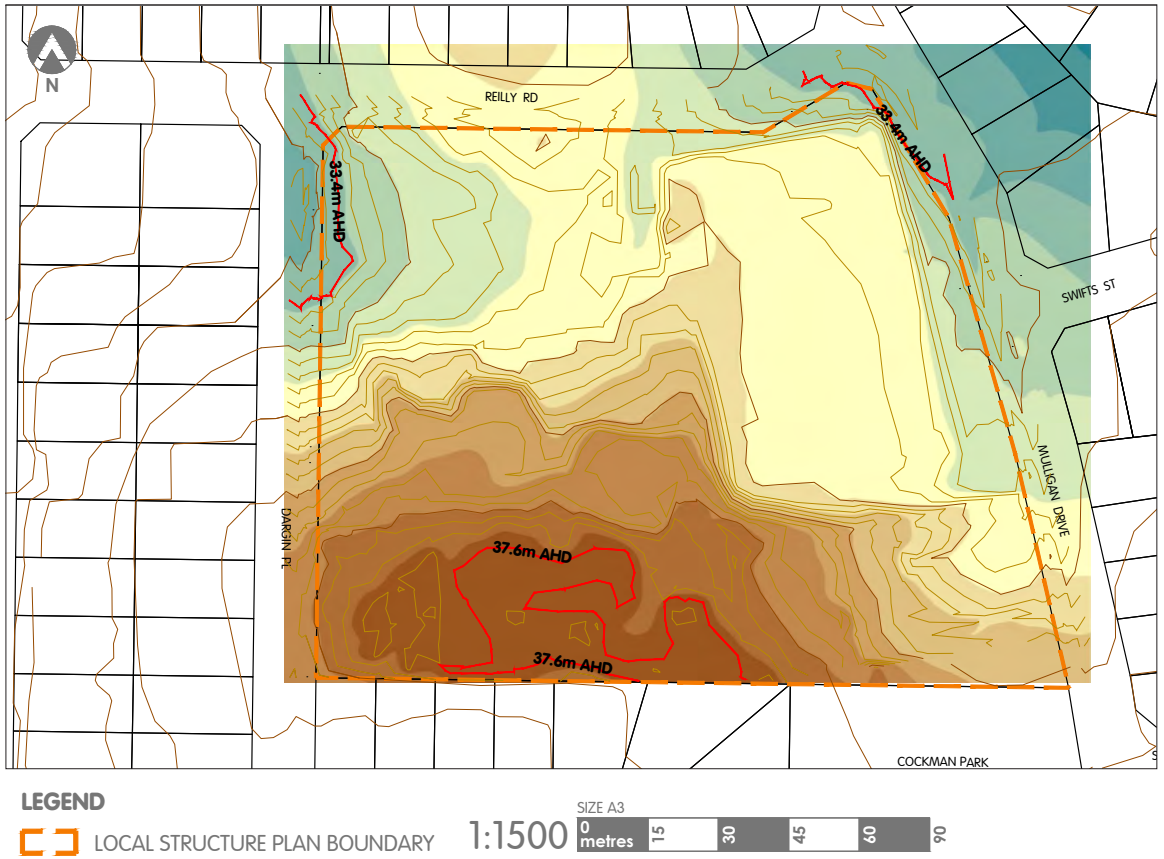
2.2.1 Landform

The topography of the LSP area is generally uniform with the gradient slightly decreasing from approximately 37.6m AHD (Australian Height Datum) in the site's south-west to a minimum of approximately 33.4m AHD in the north-east and north west corners. Level pad sites are present where the former buildings associated with the past primary school use were located.

In addition, the site had been levelled for the former school playing field located within the east of the LSP area. To allow for the levelling there is a small embankment on the western edge of the oval which is situated relatively central to the LSP area.

Refer Figure 6, Elevation Plan

FIGURE 6: ELEVATION PLAN



2.2.2 Soils

The LSP area sits upon the Spearwood Dune system, which generally consists of yellow/grey sands over limestone. Specific to the LSP area, a Geotechnical Report proposed for the LSP area confirms the following soil composition:

- Topsoil – dark brown to grey brown sandy topsoil with some silt and some rootlets to a general depth of 0.1 metres.
- Filling (Sand) – loose to medium dense, yellow-brown and grey-brown to grey, sand filling to depths of between 0.2 to 1.2 metres.
- Sand – Loose to medium density, dark grey to yellow-brown, sand with a trace of silt to test pit termination depths of between 2.5 and 2.8 metres.

The buildings associated with the former East Greenwood Primary School were removed in May and June 2011. It is possible that undiscovered services and buried fences or similar may be present within the LSP area.

Generally, the LSP area is capable of accommodating residential urban development which includes minor cut and fill site works. The Geotechnical Report makes some recommendations for construction techniques that can be implemented and enforced at the detailed design phase.

Refer Appendix 5, Geotechnical Report.

2.2.3 Acid Sulfate Soils

The Department of Environment's Risk Mapping indicates that the entire extent of the LSP area has no known risk of acid sulfate soils occurring within 3 metres of the natural soil surface.

2.3 GROUNDWATER AND SURFACE WATER

No surface water features exist within the LSP area.

The Department of Water's (DoW) Perth Ground Water Atlas estimates the maximum groundwater elevation across the LSP area to be between 22 and 24 metres AHD, giving a minimum clearance to groundwater of 10 metres.

The LSP area overlies the Perth Coastal Underground Water Pollution Control Area (Priority 3), which means water supply sources can co-exist with other land uses such as residential development. The development of the site is not considered to have significant pollution potential. Stormwater management and drainage to groundwater will be managed in accordance with the Better Urban Water Management Framework.

Refer Appendix 4, Environmental Summary Report.

2.4 WATER MANAGEMENT AND CONSERVATION

Pre-lodgement consultation with the DoW in November 2014 confirms that a Local Water Management Strategy (LWMS) is not necessary to support the proposed LSP, given the relative size of the proposed development coupled with the lack of water infiltration constraints within the LSP area.

Pre-lodgment consultation with the City of Joondalup confirms that the surrounding urban stormwater catchment appears to be at capacity. It is therefore necessary to retain and infiltrate a large majority of stormwater on the site, within the proposed POS area. The management of stormwater and implementation of water sensitive urban design will be formally documented in an Urban Water Management Plan (UWMP) prepared as a condition of subdivision approval, as recommended by the DoW.

Refer Appendix 4, Environmental Summary Report.

2.5 BUSHFIRE HAZARD

The subject site is not within a bushfire risk area and is generally cleared, with scattered strands of parkland trees. As such, bushfire risk is considered low.

Refer Appendix 4, Environmental Summary Report.

2.6 HERITAGE AND SITE HISTORY

The site subject of the LSP area was first designated a government primary school site in the late 1960s, during the time the Parin family first subdivided and developed the Greenwood locality. The East Greenwood Primary School serviced the immediate surrounding community for more than four decades, and had an active Parents and Community Group (P&C Group) and strong teaching staff. A few of the teaching staff serviced the school for a period of 20+ years, with some valued staff teaching for around 40 years at the former school.

The community consultation process (detailed in the forthcoming sections) recorded many historical memories of the former use. Many community members recognised significant sports carnival events, local sporting events such as football and soccer, P&C meetings, school concerts and fetes, and various fundraising efforts for school amenities, such as the kiln for the art room and local business involvement. The community also recognised the works of a former notable school pupil who has excelled to become a leading Australian Cartoonist, writing and drawing the Australian comic strip Ginger Megs.

In 2007, the Minister for Education and Training announced that East Greenwood Primary School and Allenswood Primary School would be replaced by one new school collocated on the Allenswood site (to be known as Greenwood Primary School). This would result in the East Greenwood Primary School site being surplus to the DET needs. The East Greenwood Primary school was closed toward the end of the 2010 school year after completion of the new Greenwood Primary School in late 2010.

The site was sold to the Department of Housing and rezoned in 2010 to allow for residential development, subject to an endorsed local structure plan.

Refer Figure 7, Historical Photographs of Former East Greenwood Primary School.

FIGURE 7: HISTORICAL PHOTOGRAPHS OF FORMER EAST GREENWOOD PRIMARY SCHOOL

2.7 EXISTING AND SURROUNDING COMMUNITY

Development of the area dates primarily from the late 1960s, with rapid growth taking place during the 1970s. The population has declined since the early 1990s, as a result of relative stability in dwelling stock and a decline in the average number of persons living in each dwelling.

Analysis of the age structure of the Greenwood population in 2006 compared to that of the City of Joondalup shows that there was a smaller proportion of people in the younger age groups (0 to 17) but a larger proportion of people in the older age groups (60+).

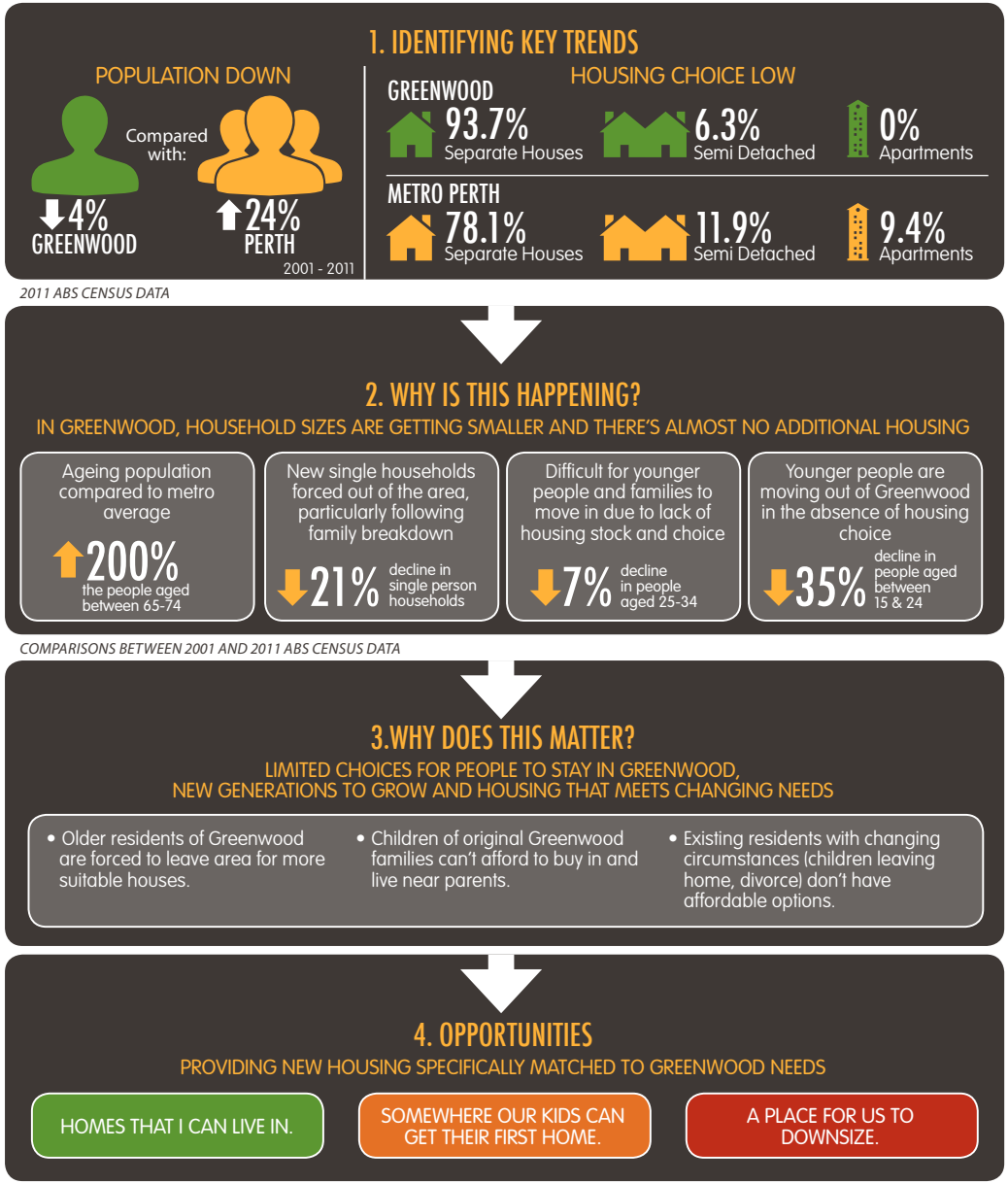
As an area like Greenwood ages, more housing stock is freed up through migration and mortality enabling families to re-populate these areas. Family breakups can also result in single parent families and lone person households seeking out affordable and suitable housing options. The process of regeneration occurs most readily in areas that have managed to minimise loss of family services and that can adapt by developing a diversity of housing stock suitable to a wider variety of household types.

Development of the LSP area therefore provides the opportunity to target a niche infill market within Greenwood, particularly as empty nesters and lone person households look to upgrade to a newer home and/or downsize their family size dwellings.

Figure 8 provides a snapshot of the demographic analysis process used to gain a better understanding of existing and future housing needs in Greenwood. The principal conclusion that can be drawn from the analysis is the significant potential for development of the LSP area to assist in creating housing opportunities for a broader range of people. The key groups identified include:

- Couples and singles with no children.
- First home buyers.
- Downsizers, particularly those in the area looking to upgrade to a new dwelling.
- Single parent families.

FIGURE 8: UNDERSTANDING LOCAL HOUSING NEEDS



2.8 COMMUNITY CONSULTATION

2.8.1 Overview

On 28 June 2011, a petition was submitted to Parliament with 847 signatures requesting up-front early consultation, following some community concern with the redevelopment of the East Greenwood Primary School site. As part of the tender process, the DoH requested that any potential development partner would undertake community consultation to the satisfaction of the City of Joondalup. To date, Australand has been committed to exceeding its LSP statutory obligations in this area, with a rigorous community consultation programme implemented since its appointment.

At the time in which the LSP area was rezoned to Urban Development, it was originally agreed with the City of Joondalup that community consultation would take place prior to the submission of the LSP. A Community Consultation Plan was prepared and agreed to by the City, consisting of:

- A Community Ideas Day.
- Community feedback form collection period (opportunity for community to submit comment).
- A Community Working Group (added as a response to community requests for further feedback opportunity).

On the 2nd August 2014 a Community Ideas Day was held in accordance with the terms of the agreed plan.

The forum was well attended by approximately 150 community members and a significant amount of feedback was gathered to assist the development of the LSP.

In addition to the community's input in relation to the design of the project there was considerable community feedback about the process of consultation and in response to that feedback the proponents resolved to undertake further refinement to the plan to increase the depth and local relevance of the consultation. This resulted in the establishment of the Greenwood Working Group, the role of which was to provide input into the development of the LSP.

Beyond the scope of the agreed Community Consultation Plan, Australand implemented the following initiatives.

- A facebook page for community members to share comments and provide feedback.
- A dedicated website devoted to providing information to the community, including a full time community liaison service for all enquires via phone or email.

In its entirety, the community consultation process resulted in a number of community members participating in the following manner:

- Approximately 150 local community members participating in the Community Ideas day held on 2 August 2014.
- 51 Feedback forms totalling almost 1000 comments being submitted by 9 September 2014.
- 22 Working Group EOI forms being submitted and a selected Working Group of 12 community members.

Refer Appendix 2, Consultation Plan, Community Feedback Summary, and Working Group Session Minutes.

2.8.2 Vision and Objectives Presented to the Community

From its inception, the aim of the project has been to deliver a quality housing development that enhances the quality of life for the existing Greenwood community and future residents.

A project vision was presented at the Community Ideas Day - A Village in the Green. The vision is to achieve a fusion between the leafy and spacious sense of place that is "Greenwood" and the more urban character that the proposed housing choices will bring. It is underpinned by four key objectives:

2.8.3 Community Ideas Day and Public Consultation Period

On 2 August 2014, a Community Ideas Day was held at Warwick Leisure Centre which attracted approximately 150 local community members. The ideas day format was intended to be an informal setting where community participants could receive and share important information, engage and contribute ideas to the design of the LSP. Importantly, the design of the forum was not a 'design and defend' exercise, rather the focus was on community contribution in-lieu of a formal draft plan being completed for the LSP area. Community participants were provided with the opportunity to speak with the project team, and give feedback on the broad vision and ideas that were presented.

Community sentiment was captured in the following manner:

- Comments collected on post-it notes from the participants.
- Comments collected from feedback forms lodged on the day and within a one month feedback period – total 51 forms submitted.
- The Greenwood East Working Group Community Facebook page and email address was established, which was used to keep the conversation going, and to respond to community enquiry.

Community feedback was summarised according to the four objectives of the vision. This enabled a more rigorous testing of the vision and provided a framework for balancing project objectives with community desires.

A total of 966 comments were received from the above processes, which are summarised in Table 2.

TABLE 2: COMMUNITY FEEDBACK SUMMARY

HOUSING CHOICES	39.9 % _commented on density and land use
GREAT PUBLIC SPACES	36.1 % _commented on open space, recreation and nature
HIGH QUALITY DESIGN	12.3% _commented on height, layout of site and built form
NEIGHBOURHOOD CHARACTER	11.7% _commented on traffic, parking and pedestrian safety

966 Total Comments received	approx. 150 estimated participants at Ideas Day	51 Total feedback forms received

2.8.4 Greenwood East Working Group

Following the feedback received during the community consultation process – specifically, the request for more opportunities for involvement – a Community Working Group was established. An aim of the Working Group was to capture the representative views of a suitable cross-section of the community, particularly those who live closest to the site, through an EOI process. Of the 22 EOI forms that were submitted, a total of 12 members were selected to form the Greenwood East Working Group. The selection was based on a number of factors including age, gender, address relative to the site, representation of local community associations, availability, and consideration of justification submitted. The Working Group sessions were run by independent facilitators, Estill Associates, and observed by City of Joondalup Councillors John Chester and Brian Corr.

Refer to Appendix 2 for detailed minutes and agenda.

The objective of the Working Group was:

To provide input to the development of the emerging Structure Plan for the East Greenwood Primary School site redevelopment.

The 12 Working Group members collaborated in a transparent, and open manner to help the project partners better understand and address key community issues. An invaluable understanding of local needs and aspirations was gained as a result of the process.

Two Working Group sessions occurred following the Community Ideas Days and at the conclusion of the feedback period. The first session occurred on 30 September 2014. Following feedback received during the Ideas Day and via feedback forms, the vision was developed with Working Group in the following key areas:

- Commitment to no 4 storeys buildings.
- 1 and 2 storeys buildings around the edge of the site.
- Potential for substantial mature tree retention.
- Better understanding of district traffic issues gained.
- Spreading vehicle access points around surrounding streets.
- Architecture responsive to the surroundings.
- Interpretation of school history.

The second session occurred on 13 October 2014. Following feedback from the Working Group at the first session, issues were addressed and the vision refined as follows:

- Overlooking – a 12m tree protection zone was established on the rear boundary and commitments made on minimum window heights.
- Public Open Space – 13% provision, over and above the 10% requirement.
    - native landscaping and recycled brick and timber ('rustic') materials in open space.
- Yield estimate provided at 115 – 135 dwellings.
- Potential parking locations shown, including on lots, visitor parking and Cockman Park parking.
- Examples of garbage bins in lanes and the desired lane character provided as requested.

The Working Group raised concerns with the intersection proposed at the time near the corner of Mulligan Drive and Reilly Way. They also requested more design detail in the LSP, both of which have been addressed in this report.

2.8.5 Key Outcomes from Community Consultation Process

A concept plan was presented at the conclusion of the second Working Group Session. The twelve members were surveyed independently on their level of support for the plan, the results of which represent a key outcome of the consultation process, in particular, that none objected nor strongly objected to the plan:

A summary of the community feedback and key outcomes resulting from the aforementioned processes are shown in Table 3 opposite.

TABLE 3: COMMUNITY FEEDBACK AND LSP RESPONSE

COMMUNITY FEEDBACK	RESPONSE	ACHIEVED
HOUSING CHOICE		
The community has sought clarification on the level of social housing to be provided in the project.	The project will provide 1 in 9 dwellings for social housing, including catering for the needs of elderly, people with disabilities and single parent families.	✓
Community feedback suggested that there are residents looking to downsize to low maintenance properties within Greenwood	Australand will be proposing low maintenance dwellings to suit this buyer profile.	✓
Community feedback suggested that the development should allow for people to age in place without having to live in a retirement village	Some single storey dwellings that are adaptable to allow for people to age in place will be proposed.	✓
Feedback was received that housing opportunities should be made available at price points accessible to First Home Buyers	An array of housing options will be incorporated that will allow people on low to moderate incomes to acquire a property in proximity to their families and friends.	✓
The community expressed a desire to see a range of dwelling types provided	The project is proposing 1, 2 and 3 bedroom product in the form of single storey and double storey homes, as well as apartments.	✓
PUBLIC OPEN SPACE		
The community wanted surety that 10% public open space (POS) would be provided	Australand is aiming to achieve a provision of approximately 25% of POS, well above the 10% POS required.	✓
The community wants to see the retention of native vegetation and for implemented vegetation to be predominantly native	Predominantly native vegetation and landscaping that fits in with the existing trees to be retained on site will be included.	✓
The community expressed a desire to retain trees on site and located their preference for retention at the Community Ideas Day	Comments have been taken on board and and the developer is proposing to retain a significant number of trees in the north west corner, centre and near the southern boundary of the site in accordance with community feedback.	✓
The community expressed a desire that the POS should be useable by all local residents and not just those within the development	The POS will be accessible to all residents with pedestrian connections being provided through the site down to Cockman Park	✓
The working group do not want to see public toilets within the POS	Public toilets within the public open space will not form part of the landscape proposal.	✓
Members of the community expressed a desire to see some form of interpretation of the sites former use as a primary school in the landscaping	The developer will be looking to identify a former school building footprint, incorporate a new playground and other opportunities to celebrate the social history of the site as part of the development.	✓
The community expressed a desire to see sustainability incorporated into the built form outcomes	Australand will be assessing the project against the Green Building Council "Greenstar Communities" rating tool and also setting minimum NATHERS ratings for the environmental performance of individual homes.	✓

COMMUNITY FEEDBACK	RESPONSE	ACHIEVED
HEIGHT AND DENSITY		
The community strongly objected to 4 storey apartments	There will not be any 4 storey apartments anywhere on the site.	✓
The community expressed concern around the inclusion of apartments	This feedback has been taken on board. Only two locations are proposed for 3 storey apartments around the central open space area, away from the edges of the site.	✓
The community expressed concerns about privacy and overlooking onto housing that fronts Dargin Place and backs directly onto the development	Minimum rear setbacks have been increased to 12m with second storey windows to be a minimum height of 1.65m from floor level to prevent overlooking. A protection zone has also been introduced to ensure the existing trees are retained.	✓
Some community feedback suggested that there should not be any dwellings above 1 storey along Dargin Place, Reilly Way or Mulligan Drive	The existing surrounding zoning allows 2 storey houses. Notwithstanding Australand have taken this feedback on board and houses around the outside edge of the project area will be predominantly single storey.	✓
The community expressed a desire to see artist's impressions as part of the LSP submission.	Artist impressions will be provided as part of the Local Structure Plan submission.	✓
TRAFFIC		
The community expressed concerns about the additional traffic placed on the neighbouring streets	As agreed through the Working Group process the project will provide street and lane connections to all street frontage to disperse traffic. The LSP will contain a traffic assessment which will compare the traffic volumes to the previous school use and address the relative effect on the wider street network including the Cockman and Warwick Road intersection. The resultant traffic will be equivalent to the site's former use.	✓
The community does not want to see roads connecting through the site that promote rat-running	The street network will be designed to ensure outside traffic does not short-cut through the site.	✓
The community, including residents directly adjacent to the site, did not want to see crossovers along Dargin Place, Reilly Way and Mulligan Drive	The proposed dwellings will be provided with rear lane access. This will allow houses to front the existing streets with generous landscaped verges. Garages, bin collection points and other services will be kept from view in the rear laneways.	✓
The community expressed concerns about placing an access/egress point near the intersection of Reilly Way and Mulligan Drive due to pre-existing traffic issues.	The proposed access point near the intersection of Reilly Way and Mulligan Drive has been removed.	✓
The community expressed concerns around the provision of visitor parking	Visitor parking will be provided throughout the site and above the minimum required standards.	✓

3.0 LAND USE AND SUBDIVISION REQUIREMENTS

3.1 SUSTAINABLE DEVELOPMENT OUTCOMES

From its inception, the Australand and Department of Housing partnership established a corporate commitment with the intent of delivering a development that delivered best practice sustainable outcomes for the East Greenwood community. That is, due consideration given to economic, social, and environmental design attributes in the interest of serving current and future demographics. The necessity for a sustainable development outcome was predicated through the community consultation process.

The intent of the detailed design is to deliver a range of housing products to best cater for a wide variety of household structures. This approach ensures the current gaps in available housing stock are addressed, including couples and singles with no kids, first home buyers, downsizers, and single parent families.

The inclusion of a rigorous community consultation process ensures that social factors are not only considered, but solutions and outcomes are suggested by the community for the community.

TABLE 4: SUSTAINABLE DEVELOPMENT OUTCOMES

PLACE

Active community development program for new and existing residents

Celebrated history of learning in the public domain and community life

'Success' and 'achievement' school motto reflected in the quality of housing and community

Diverse character responsive to sub-urban context and broader opportunities

LEARNING

Generous open space provision, double the standard requirement

Existing activities enhanced including car parking, dog walking and active recreation

Safety and Security achieved through the application of CPTED principles

A proud community empowered to achieve greatness, collectively and individually

HOUSING

Affordability Significant portion of housing priced below the Greenwood median

Choice of up to 20 housing options in response to demographic analysis

Lifelong housing through adaptable housing design and downsizing options

Architectural quality balancing unity and variety

HEALTH

Active living including walking, cycling, exercise circuits and kick about areas

Mental well being supported via socially dwelling engaging frontages and spaces

Ageing in place improves health, well being and life expectancy

BUILDING MANAGEMENT

Construction Management initiatives to minimise disruption, nuisance and noise

Waste reduction, through construction of new dwellings

Recycling of unretainable trees

Environmental Management Plan to address vegetation and stormwater

ECOLOGY

Biodiversity and carbon capture through significant tree retention and POS

Water wise households and public landscapes

Waste reduction during building construction

Energy Efficiency Average 7.0 star NaTHERS

Greenstar communities, rating minimum 4 star rating for the development

ACCESS

Public accessibility with about half of the site accessible to the public

Inclusiveness from high visual and physical permeability

Neighbourhood connectivity enhanced for walking and cycling

People place designed for priority over vehicles

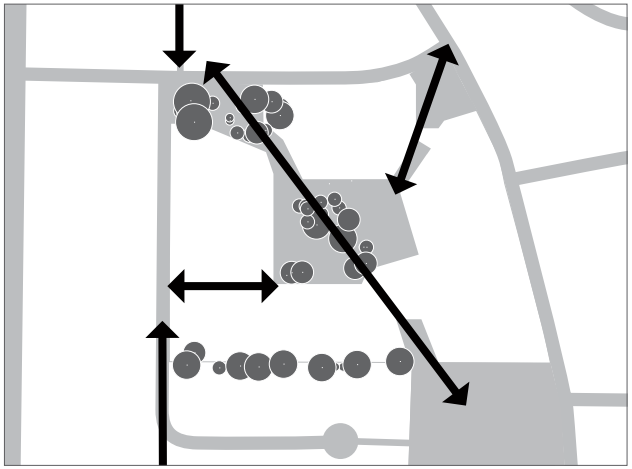
GOVERNANCE

Understanding stakeholders through a robust Community Plan

A community vision for the site shaped through genuine community engagement

Speed to market through streamlined approvals and Australand's experience

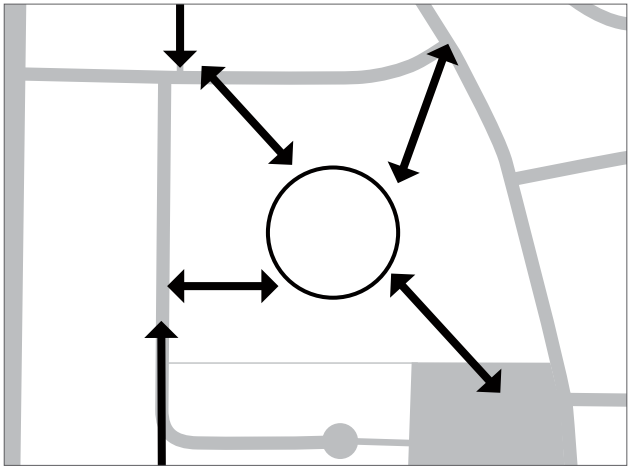
3.2 URBAN DESIGN PRINCIPLES



GREEN LINKS

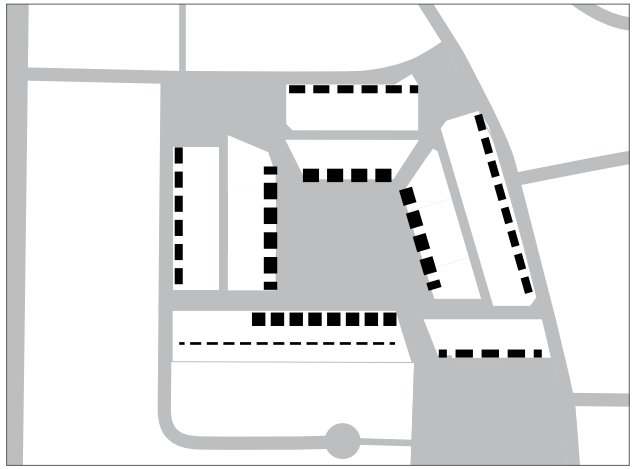
Complementary to the project vision is the notion of 'keeping the green in Greenwood'.

The layout and placement of open space has been predicated by the need to retain trees of high aesthetic, cultural, and environmental value. These trees generally fall within the central park, the north west of the open space, and within private landholdings abutting residential properties to the south. The trees of high retention value located within the residential private landholdings will be protected by ensuring building envelopes do not encroach, through the creation of a 'tree protection zone' which will be incorporated into a future Local Development Plan.



VILLAGE GREEN FOCUS

In accordance with the project vision, the intent is to provide an urban village within the green. The central park becomes the focal point for the village, and creates a distinct community meeting place and local identity. The design's intent is to ensure the green space is open and accessible to the entire Greenwood community.

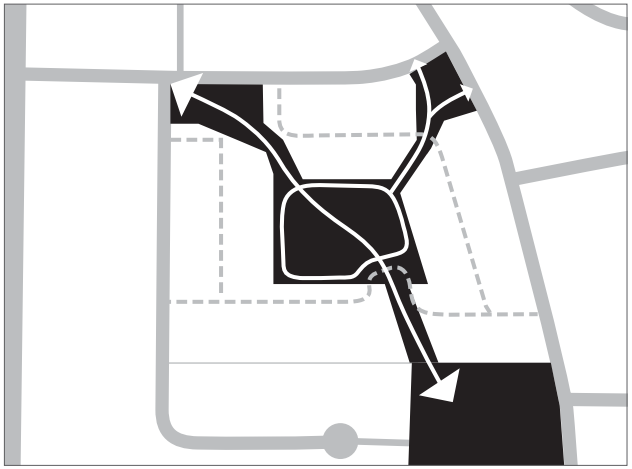


CONTEXT SENSITIVE INTERFACES

Consideration to interface treatments has been paramount to the resultant design. Generally, three key interface conditions have been established, including:

- Adjoining rear boundary to the south and response to abutting residential properties.
- Fronting existing streets.
- Fronting village green directly.

Each requires a context sensitive response, particularly to building height, setbacks, articulation, architecture, landscape and civil engineering.



PEOPLE PLACE

The public open space provision well in excess of what the 10% requirement will create significant community benefits, particularly given the focus on quality and meeting local needs.

Greenwood has been designed for people first and cars second. This is best reflected by the almost completely vehicle free green links through the site, which is made possible by rear lanes. Lanes also enhance the streetscape on external streets. Visitor parking will be provided well in excess of requirements.

BUILT FORM DIVERSITY

The immense housing choice proposed for Greenwood will translate into diverse built form and immersive streetscapes.

A significant variety of housing choices will be available, ranging from 1 bedroom studio apartments to 3 bedroom, two bathroom double storey homes.

PASSIVE SURVEILLANCE

Over 60 dwellings will front the central open space, providing surveillance of this area and adjoining car parking. Defined sight lines and placement of activity in the open space is expected to reduce opportunities for crime. Lanes have been designed in accordance with Liveable Neighbourhoods and each have visible site lines from outside the site. Studio apartments have been placed with the intent of providing surveillance over laneways.

3.3 ILLUSTRATIVE MASTERPLAN

The Illustrative Masterplan is a product of significant community involvement and participation. The masterplan outlines the general intent for the LSP area, based on the aforementioned design principles. High quality architecture and public realm treatments are paramount to the masterplan's success.

Refer Figure 9, 10 and 11.

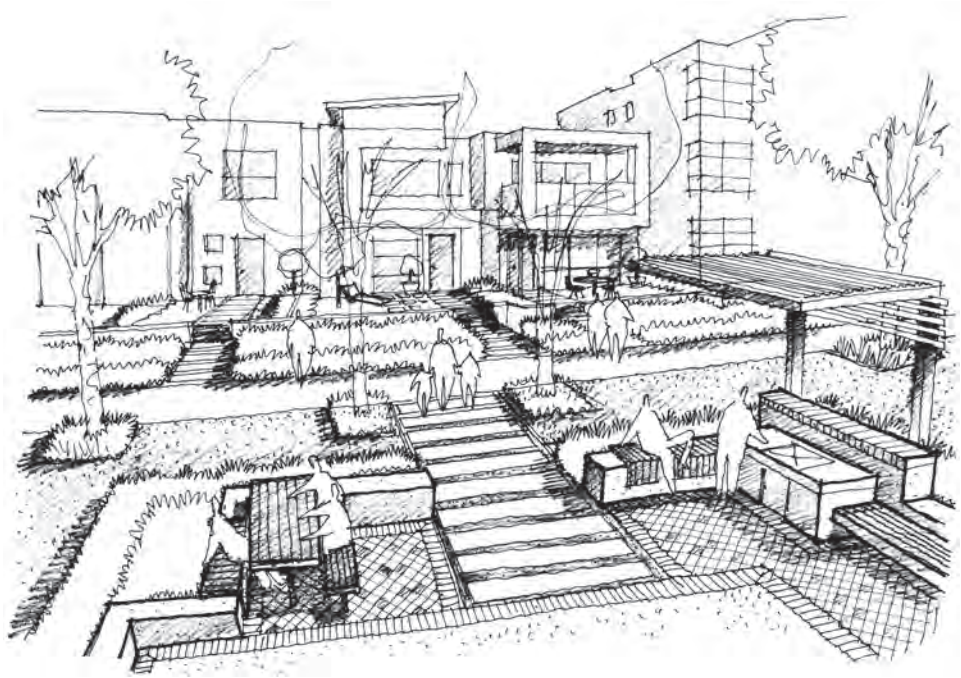


FIGURE 9: ILLUSTRATION OF VILLAGE GREEN

FIGURE 10: ILLUSTRATIVE BUILDING HEIGHTS PLAN

FIGURE 11: ILLUSTRATIVE MASTERPLAN

Key Features

1. Studios above garages provide passive surveillance and housing choice
2. School classroom footprint frames new playground and interpretation of historic uses
3. Deeper lots, double storey housing and retained trees on southern boundary provide buffer to existing housing
4. Variety of seating, including shaded picnic facilities and barbecue
5. More urban two and three storey housing overlooking Village Green
6. Views through lanes for passive surveillance
7. Pinch point designed only for the circulation of garbage trucks. Pedestrian friendly treatment
8. Subtle definition of public / private interface
9. Softening of lanes through pot plants and shrubs
10. Increased front setbacks opposite existing homes
11. Gaps between buildings

3.4 BUILT FORM AND DELIVERY

The three broad target demographics will comprise a wide range of the existing Greenwood community (demographic segments), as shown in figure 12. This mix of household types requires equally diverse housing choices and hence built form outcomes. Up to 20 different housing types are proposed, the variety of which is illustrated in figure 13, including single storey built form (shown faded back) fronting existing homes.

A limited number of three storey apartment buildings frame the central park. The built form is designed in a contemporary architectural style, which provides variation in the street facades and rooflines.

In order to cater for a variety of demographics and household structures, and in the interest of housing affordability and opportunity, the resultant housing product and lots are generally smaller than the established housing stock surrounding the LSP area. In response to this, the design ensures adequate setbacks from the street to create a natural landscape buffer, building upon the green ethos reckoning. Variations in height and architectural style also assist in creating a streetscape that best responds to the established built form and contextual setting.

Refer to Figures 12, 13, 14 and 15.

The concept developed consists of 95-100 lots that accommodates an expected 115-135 dwellings. It is expected the development will provide a place of residence for 250-270 people.

TARGET DEMOGRAPHICS	DEMOGRAPHIC SEGMENTS								
	 MIXED FAMILIES	 PRE-SCHOOL FAMILIES	 PRIMARY, SECONDARY SCHOOL FAMILIES	 PRE-RETIREMENT DOWNSIZER	 SHARED LIVING	 SINGLE PARENTS	 COUPLES	 DIVORCEES	 SINGLES
FAMILIES (Pre-School)	✓	✓	✓		✓	✓	✓	✓	
FIRST HOME BUYERS		✓	✓		✓	✓	✓		✓
DOWNSIZERS				✓	✓			✓	

FIGURE 12: LOCAL TARGET DEMOGRAPHICS AND SEGMENTS

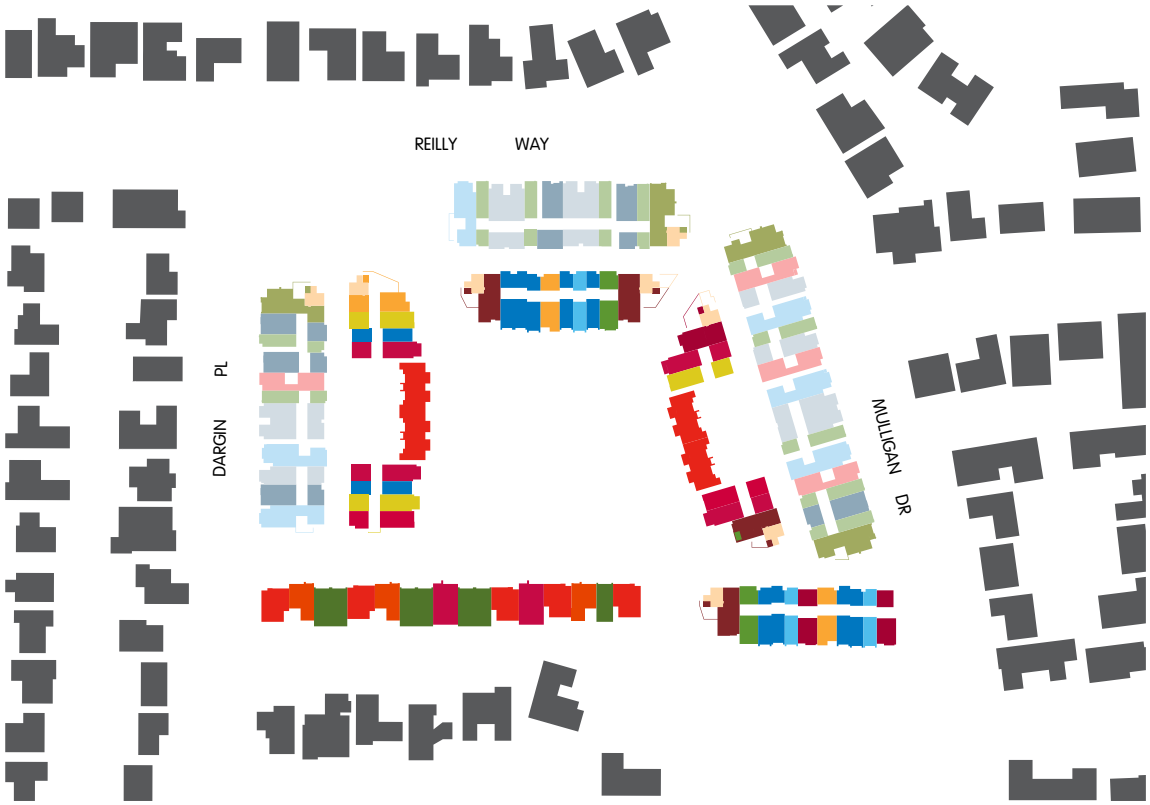


FIGURE 13: BUILT FORM DIVERSITY DIAGRAM. EACH COLOUR REPRESENTS A DIFFERENT HOUSING TYPE, WITH SINGLE STOREY HOUSING FADED BACK.

FIGURE 14: VIEW OF VILLAGE COMMON EDGE WEST

Note: the Landscape shown above is illustrative only with the intent for water wise initiatives to be utilised, as outlined in section 3.14.

FIGURE 15: DARGIN PLACE VIEW

Unlike typical land developments involving multiple builders, this project will be built out completely by the Project Partners. This means that houses, streets and open spaces will be designed and delivered as a completed community. Significant community benefits will result from this approach:

1. FASTER DELIVERY

- Faster construction times minimising disruption to surrounding residents.
- New houses and public open spaces available sooner.
- Entire streetscapes completed quicker; homes, front landscapes and streets built at the same time.

2. BETTER SITE MANAGEMENT AND SAFETY

- Potential impacts of construction parking, noise, safety and traffic all co-ordinated by a single builder.
- A single point of management and contact to keep residents informed about progress and respond to any concerns.

3. MORE CAREFUL RESPONSE TO SITE FEATURES

- A comprehensive approach to existing trees and landform.
- More people-friendly spaces between housing and parks/streets.

4. COMMITMENT TO DELIVER HOUSING CHOICE

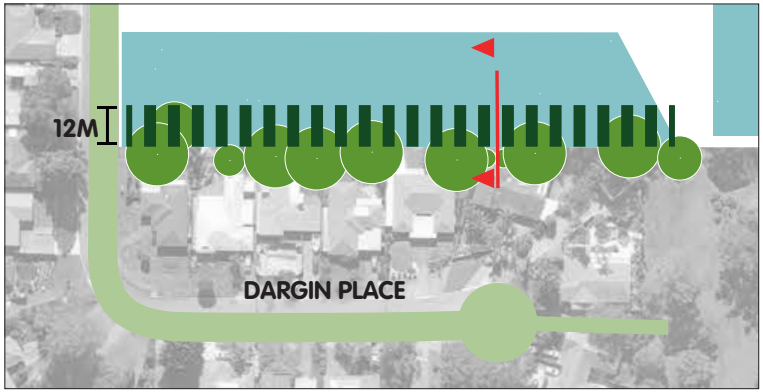
- A mix of specific housing designs that meet community needs, both now and for the future.
- Mostly housing for sale on open market, with some social housing to meet the needs of people on very low incomes.

5. HIGHER QUALITY DESIGN

- Integrated architectural design of entire streetscapes, not just individual homes.
- Control of facades; positioning of windows and treatment of front boundaries.
- Housing and park/street design that looks great and provides facilities for the community.

3.5 INTERFACE WITH ABUTTING RESIDENTIAL

The LSP area is bounded by streets on all sides with the exception of the southern boundary, which abuts existing residential dwellings. Following feedback from the community, the design intent was altered to create a more appropriate interface between the proposed development and the existing residential dwellings. As demonstrated in figures 16 and 17, the use of a 12 metre setback, which preserves existing mature trees of high retention value, will address the interface issues raised by the community. The tree protection zone will be controlled through the provisions of a Local Development Plan, provided at the detailed design phase.



Potentially Priority 1+2 Trees retained

Tree Protection Zone

2 Storey

12M Minimum building setback from rear boundary

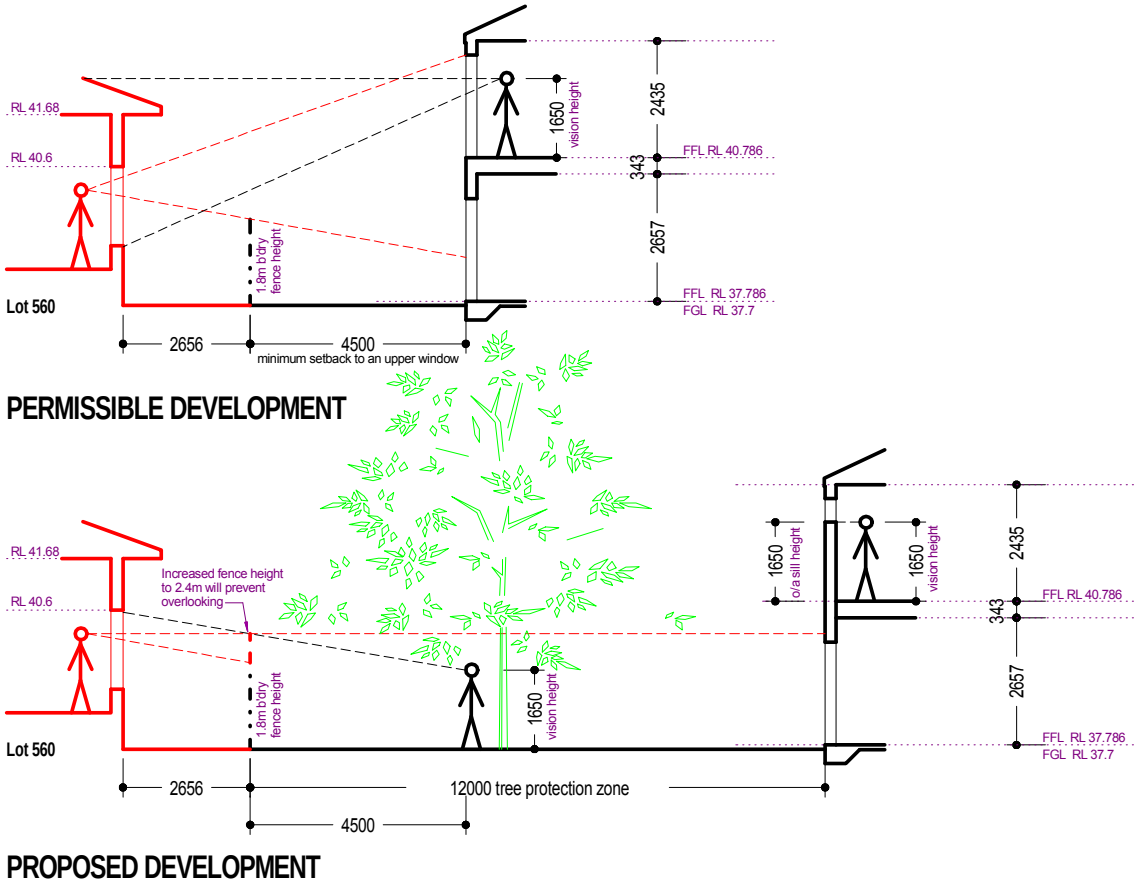
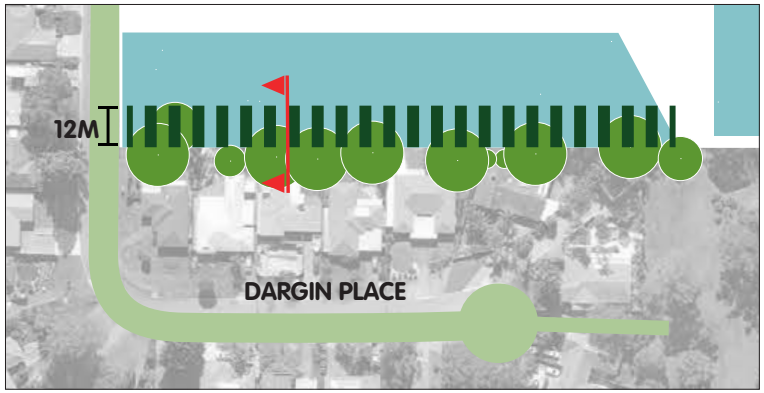


FIGURE 16: EXISTING RESIDENTIAL INTERFACE - SECTION A



Potentially Priority 1+2 Trees retained

Tree Protection Zone

2 Storey

12M Minimum building setback from rear boundary

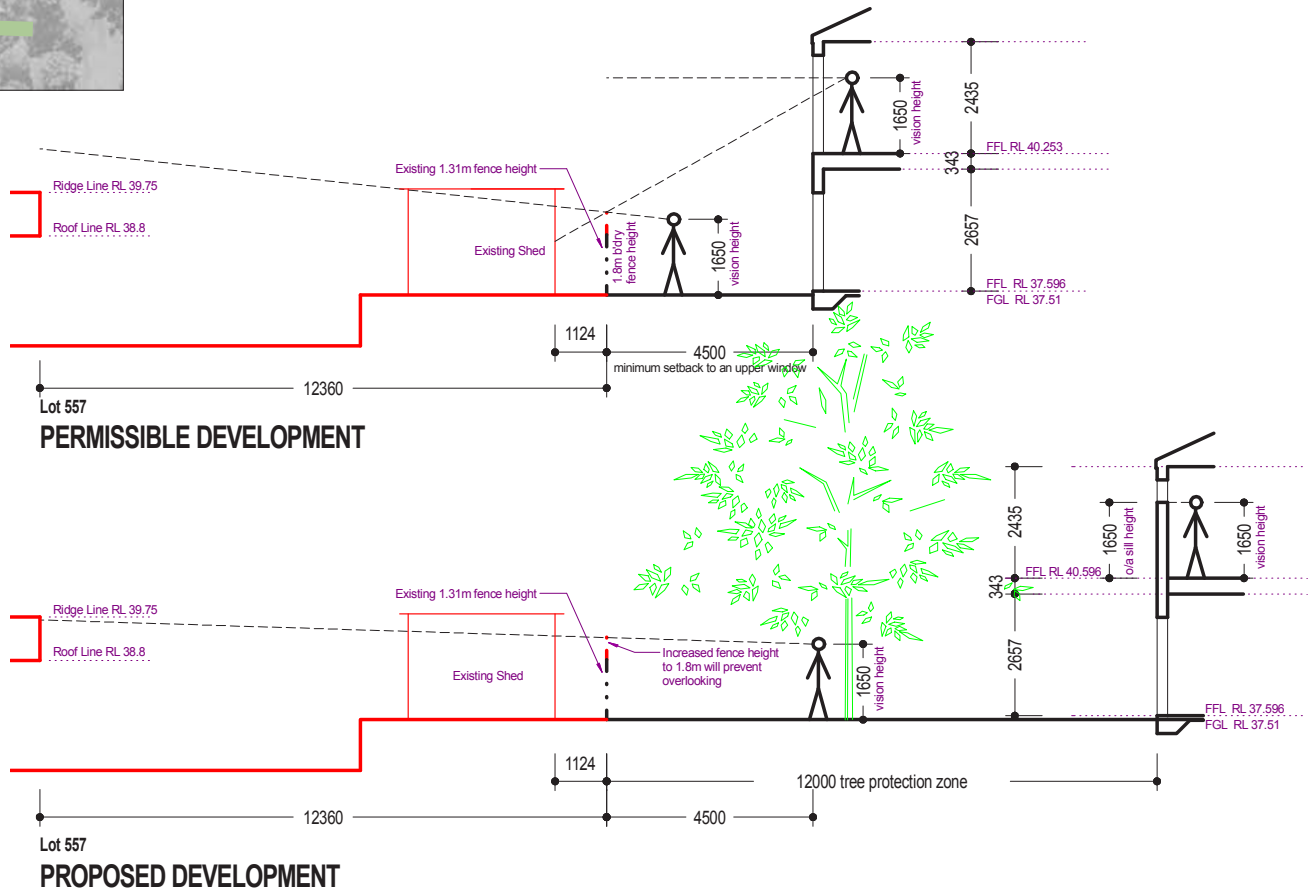


FIGURE 17: EXISTING RESIDENTIAL INTERFACE - SECTION B

3.6 OPEN SPACE AND MANAGEMENT

3.6.1 Open Space Distribution And Calculation

The design and placement of the open space considered the following key elements, identified by the community as being paramount to the developments success:

- Conserve mature trees.
- Implement native planting.
- Open space surrounding the edge of the site.
- Functional parkland with walk trails connected to the existing community and Cockman Park to the south.

Table 5 and 6 provide a breakdown of the open space calculations, in accordance with the WAPC's Liveable Neighbourhoods Operational Policy. The Local Infrastructure and Servicing Strategy (Appendix 8) contains a drainage catchment plan (Appendix B) that depicts indicative stormwater retention basins. The drainage basins shown on the plan relate to the 1 in 5 year storm event. Preliminary engineering calculations indicate that approximately 0.0502 hectares of the stormwater basins will be inundated at the 1 in 1 year storm event (classified as excluded POS, counted as a deduction). The balance of the storm water basins, being 0.0770 hectares, relates to the 1 in 5 year storm event (classified as restricted POS). As only one-fifth of the 10% open space requirement can be classified as 'restricted' (being 0.0763 hectares), 0.0007 hectares is added to the deducted POS. This results in a total of 0.0509 hectares classified as POS deductions.

As demonstrated in tables 5 and 6, a total contribution of approximately 25% open space is proposed for the LSP area, well in excess of the 10% requirement.

Refer to Figure 18, Public Open Space Provision.
Refer Appendix 8, Local Infrastructure and Servicing Strategy.

TABLE 5: PUBLIC OPEN SPACE SCHEDULE

POS Area	Total area (ha)	Unrestricted	Restricted	Excluded
A	0.8291	0.7811	0.0480	0.0322
B	0.1116	0.0896	0.0220	0.0144
C	0.0714	0.0644	0.0070	0.0036
Total	**1.0121**	**0.9351**	**0.0770**	**0.0502**

TABLE 6: PUBLIC OPEN SPACE CALCULATIONS

Local Structure Plan Area		3.8636 ha
Total Net Site Area		3.8636 ha
Deductions		0.0509
Gross Subdivisible Area (GSA)		3.8127 ha
Public Open Space requirement @ 10% of GSA		0.3813 ha
May comprise minimum 80% Unrestricted Open Space		0.3050 ha
May comprise maximum 20% Restricted Open Space		0.0763 ha
Credited Open Space		
POS Area		
A	0.7962	
B	0.0972	
C	0.0678	
Unrestricted Public Open Space		0.8849
Restricted Open Space		0.0763
Total Credited Open Space		0.9612
Total Public Open Space Provision		25.2 %

3.6.2 Tree Protection Zone

Some of the more significant and mature trees that were identified to be of high retention value, both by the community and the Arboriculture Assessment, are proposed to be within private landholdings along the LSP area's southern boundary. The design intent is to utilise the existing vegetation asset as a nature buffer between the existing dwellings to the south of the LSP area and the proposed development. The vegetation will provide a visual buffer to address potential overlooking concerns, and offer amenity and value to the existing and proposed residential dwellings.

To alleviate any concern that the trees retained within private landholdings may be at risk, a 12 metre wide setback zone to new housing the southern boundary abutting the existing residential lots will be created through the provisions of a future Local Development Plan.

FIGURE 18: PUBLIC OPEN SPACE PROVISION

3.7 LANDSCAPE MASTERPLAN AND OPEN SPACE DESIGN

In support of achieving a high quality public realm that resonates with existing and future residents, the surrounding community and other future users of the precinct, a Landscape Master Plan was prepared by Emerge Associates. The landscape approach for the project is focussed on understanding, retaining and responding to community feedback and numerous existing site assets including topography and trees. The design will include references to the sites former school use and its links into the historic surrounding community. The project will build upon the existing streetscape character through materials, plant species, content and scale.

As identified by the Greenwood community and Working Group, the desire to preserve trees of high quality within public open space is paramount to the success of the development in the context of the vision. The location and design of the open space was predicated by the Arboriculture Assessment, which identified trees of medium and high retention value. The design will maintain the majority of these trees, which are located in the central spine and north west corridor of the LSP area.

By doing so, a naturalistic 'green link' has been created, which allows pedestrians and cyclists to traverse through the site. The green link connects Cockman Park to the south with Reilly Way to the north, including the public access way through to Ricketts Way. Native vegetation becomes the central ingredient to the open space composition which is consistent with community aspirations for the site.

The existing trees are a valuable asset to the site, creating immediate impact, shade and reflect the local flora so every effort will be made to retain them where possible. Plant species will be predominantly native species which are low in water use. More specific details on water wise initiatives are discussed in section 3.14.

The central park will become the focal point for the open space, and adjacent built form. Based on the community feedback and Working Group recommendations, a small playground, barbeque area, a shade structure, and nature play opportunities are proposed for the central park. The former school oval has left a level playing field, which is captured within the central and north west parks to provide room for a 'kick-about' area.

The community voiced its desire for the open space to contain a trail and space suitable for walking dogs. The intention is to complement the native vegetation and natural feel through the use of rustic and warmer finishes, such as recycled brick pavers and timber benches.

Finally, the community expressed an aspiration to recognise the former East Greenwood Primary School through interpretive design. Included within the public open space is an open air feature element based on the layout and floor plan of the prior school canteen. The school canteen was a community initiative in raising funding and as such is an important part of the site's past use and the current community's memory. The current proposal is to mimic the floor plan with a series of low seating walls where former building walls were once located with breaks in the proposed low walls where former doorways and windows were once located. The internal area will be devoted to public uses potentially including BBQs, educational seating, signage, low planting, paving, and small play elements.

Notwithstanding the above, any proposal for recreational infrastructure within the open space is subject to a separate development application at the subsequent planning phase, and would be subject to Council approval.

Refer Appendix 3, Arboriculture Assessment
Refer Appendix 7, Landscape Masterplan
Refer to Figure 19, Landscape Masterplan.

Native Verge

Playground & BBQ

Recycled Bricks + Timbers

Dog Walking Trails

FIGURE 19: LANDSCAPE MASTERPLAN






PLANT PALETTE
A SELECTION OF NATIVE PLANTS WILL PROVIDE SEASONAL COLOUR YEAR ROUND

Note: The intention is for low maintenance water wise plants to be utlilized for landscaping throughout, as outlined in section 3.14.

3.8 CRIME PROTECTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

Crime prevention has been identified by the community as an important priority for the project, to ensure the existing high quality integrity of the Greenwood community is retained and protected

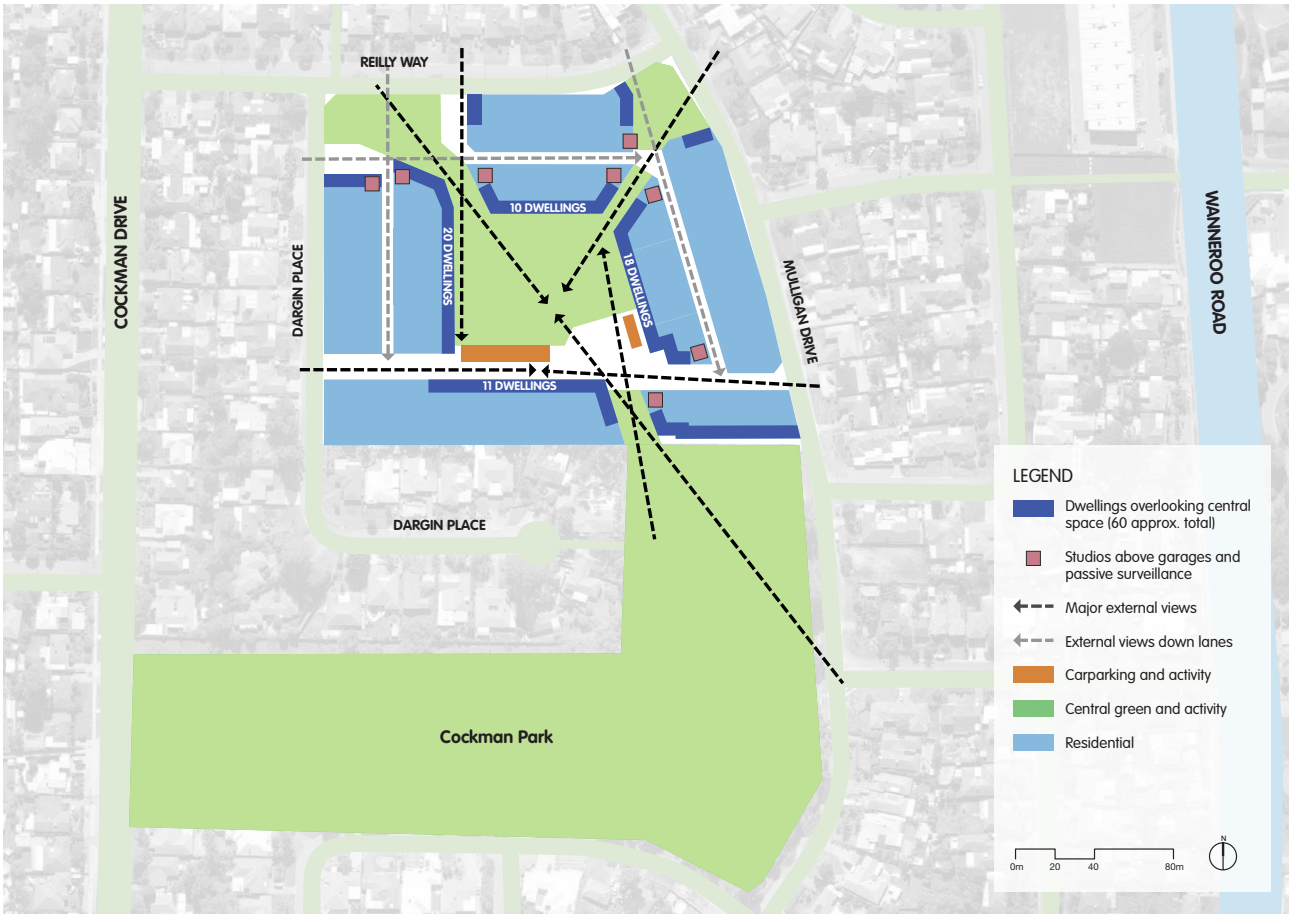
The contribution that environmental design can make to crime prevention and perceived security will be an important element in developing an overall sense of safety in the area. Specifically, the treatment of lighting, encouraging the right types of activity, designing for passive surveillance, and ensuring the design of the public realm reinforces a sense of safety can assist in achieving this outcome.

In excess of 60 dwellings have a direct outlook onto the open space, providing a range of opportunities for passive surveillance by residents of the new development. Additionally, as recommended by Elements 2 and 3 of the WAPC Liveable Neighbourhoods Operational Policy, studio apartments will book-end laneways to provide surveillance opportunities to these spaces.

Visitor and open space car parking has been carefully placed to generate activity that will further mitigate opportunities for crime. The passive design of the open space and green link can ensure that a range of activities will occur through the site.

Refer Figure 20, Passive Surveillance Analysis.

FIGURE 20: PASSIVE SURVEILLANCE ANALYSIS



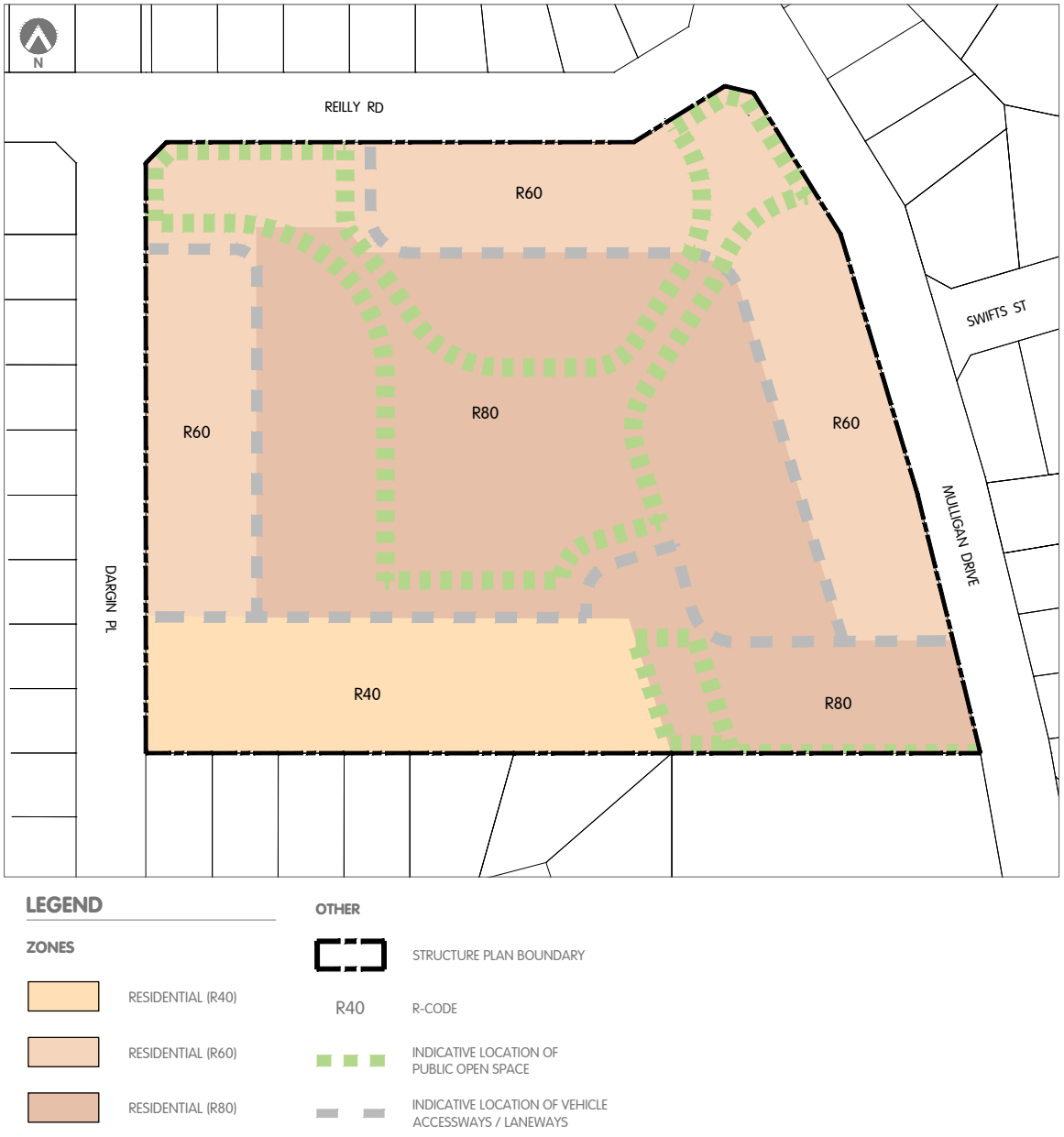
3.9 RESIDENTIAL DENSITY AND HEIGHT

As an outstanding opportunity for infill redevelopment, this project seeks to deliver diversity of housing embracing the potential to develop higher densities than would otherwise occur in a suburban context. Given the inner-middle location of the site in the metropolitan area, a more ambitious density outcome, reinforced by the density targets in Directions 2031 and demographic trends towards smaller households, is advocated by the City's Local Housing Strategy.

Notwithstanding, the intent of the design was to place more of the land in open space, for greater public benefit, than would normally be required. The provision of 25% open space therefore offsets the application of higher densities. This was a design response following a strong emerging theme from the community feedback, that an appropriate interface between the new development and existing built form be implemented.

Refer Figure 21, Local Structure Plan.

FIGURE 21: LOCAL STRUCTURE PLAN



A range of building heights are proposed that respond closely to the context of development immediately surrounding the LSP area. Generally, a mix of single and double storeys proposed towards the edges of the LSP area and interfacing with the existing streetscapes; double storey dwellings are proposed toward the core of the LSP; and some three storey apartment buildings provided in the inner core of the LSP area framing the central park.

Density is applied in accordance with the LSP plan.

The LSP will provide a minimum of 115 residential dwellings, in a mix of housing types and land tenure arrangements.

Refer to Figure 21, Building Heights Plan.

FIGURE 22: BUILDING HEIGHTS PLAN

3.10 LAND TENURE ARRANGEMENTS

Australand will deliver all built form outcomes in partnership with the Department of Housing. The majority of the development will be offered to purchasers as built-strata titles.

The central apartment lots (x4) will sit upon separate freehold (green-title) lots, with built-strata titling for individual units, car parking allocation, and common property.

The studio dwellings will be accommodated on a single freehold lot which contains two built-strata titles – one strata title for the conventional dwelling and associated car parking and storage and one for studio dwelling and associated car parking and storage. The studio dwelling and conventional dwelling contained within the lot will be classified as multiple-dwellings under the R-Codes, to allow for the studio floorspace to be located on top of a garage held in separate ownership.

The public open space will become Crown land vested in the City of Joondalup.

All roads created, including the access lanes, will become Crown land and road reserves.

3.11 EDUCATION FACILITIES

The LSP area is serviced by the Greenwood Primary School, which is a combination of the former East Greenwood Primary School and Allenswood Primary School. Greenwood Primary School is approximately 750 metres west of the LSP area. Additionally, the Marangaroo Primary School is approximately 750 metres east of the LSP area, but outside the school's 'intake area' as defined by the Department of Education.

In Semester 2 of 2014, the Department of Education's database listed 327 enrolled students for Greenwood Primary School, with a capacity for 465 students. Capacity is likely to be further expanded when grade 7 students transition to secondary education facilities in 2015.

The LSP area is serviced by the Warwick Senior High School, located approximately 1.0 kilometre to the south. In Semester 2 of 2014, Warwick Senior High School had 491 students enrolled, down from a 576 students in 2010.

The availability of education facilities is considered sufficient to adequately service proposed development.

3.12 EMPLOYMENT

The LSP area is 17 kilometres north of the Perth city centre and 9.5 kilometres south of the Joondalup city centre. Both provide substantial employment opportunities and are accessible via the existing road network and Greenwood Train Station with connecting services.

The LSP area is in between the major strategic employment areas of Wangara, 2.6 kilometres to the north, and Balcatta, 3.5 kilometres to the south.

The LSP area is within the Kingsway Shopping Centre retail and employment catchment. Kingsway Shopping Centre is approximately 800 metres to the north east of the LSP area. A small light industrial precinct is located 400 metres north of the LSP area, on the corner of Wanneroo Road and Hepburn Avenue.

The availability of employment services is considered sufficient to adequately service a residential infill development of this nature.

Refer to Figure 2, Local Context Plan

3.13 STREETS AND MOVEMENT

This section has been informed by the Transport Impact Assessment (Appendix 6).

3.13.1 Movement network hierarchy

The LSP has been designed to prioritise pedestrian and cycle movements, allowing residents to move through the site and to access services offered within the broader locality, including transport. This has been achieved through the creation of the green link that ensures pedestrian encounters with LSP roads are minimised.

The LSP integrate with the existing local street network, and creates 13 metre road reserves (access streets) and 6 metre access lanes as depicted in the street network plan. The effective width of the access lanes will be between 8m and 10 metres achieved through garage setbacks. This will create a larger space for landscaping and amenity. The rationale behind this is for the setback areas to be maintained by private landowners as opposed to creating a maintenance burden for the City of Joondalup.

The existing road network hierarchy can be described as follows:

Street	Classification	Carriageway width	Pedestrian path
Cockman Road	Distributor B	9.4 metres (2m median)	One side only – 1.2 metres
Mulligan Drive	Access Road	7.2 metres	One side only – 1.2 metres
Gorman Road	Access Street	9.8 metres (1.8m median)	One side only – 1.2 metres
Reilly Way	Access Street	7.2 metres	One side only – 1.2 metres
Dargin Place	Access Street	7.2 metres	One side only – 1.2 metres

Refer to Figure 23, Movement Network Hierarchy Plan.

FIGURE 23: MOVEMENT NETWORK HIERARCHY PLAN

FIGURE 24: TYPICAL LANE CHARACTER

FIGURE 25: STREET SECTION (ACCESS STREET D MINIMUM WIDTH)

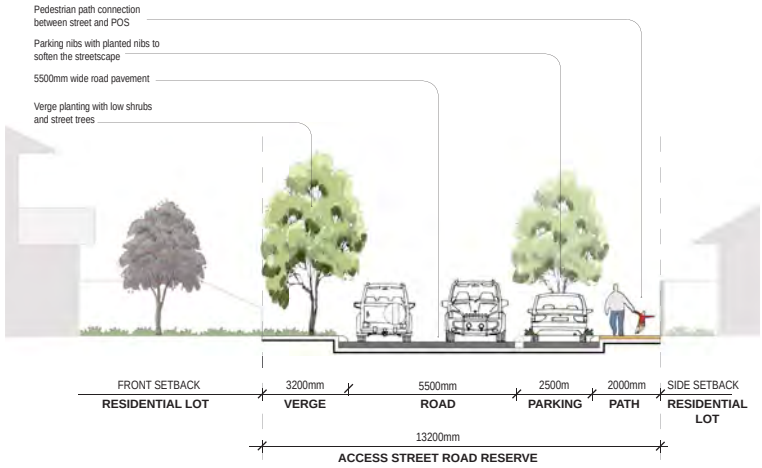
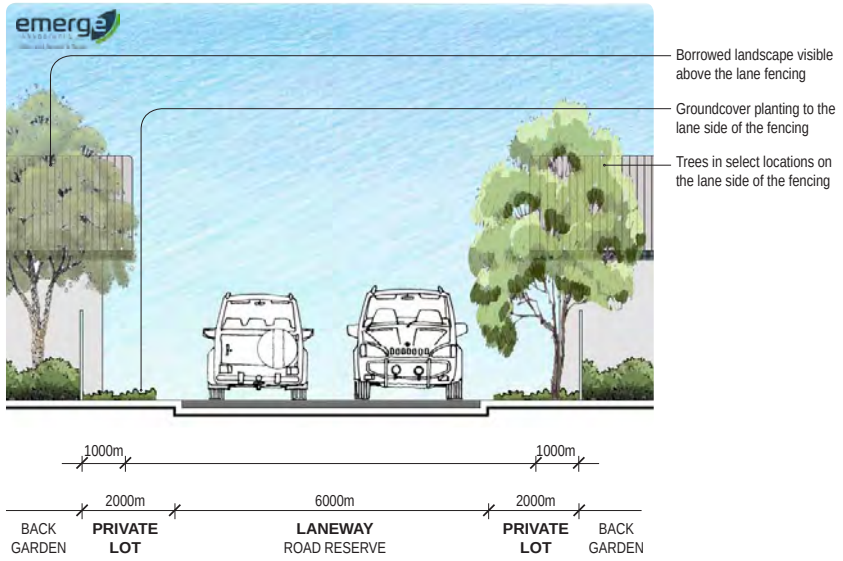


FIGURE 26: TYPICAL LANE SECTION



3.13.2 Pedestrian

The pedestrian network will provide a high level of accessibility and connectivity for pedestrians within the LSP area including connections to major external nodes. The relatively low traffic volumes on the existing surrounding street network and the estimated volumes for the proposed street network will allow pedestrians to safely and easily navigate the development crossing streets as desired.

3.13.3 Cycling

Shared paths will replace existing footpaths on external streets, connecting with the existing and proposed bicycle network. Recreational cycling has been planned for within the proposed green link and open space. Due to the low levels on anticipated traffic on the proposed street network, and the design that encourages traffic calming, cycling can also be safely accommodated on the proposed streets and lanes.

3.13.4 Public transport

Transperth bus service 447 and its bus stops on Cockman Road are within 400 metres of the LSP area. Transperth bus services 389 and 450 and its bus stops are located on Wanneroo Road, within 600 metres walking distance to the east of the LSP area.

Refer to Figure 24, 25, 26 and 27.

FIGURE 27: PEDESTRIAN & CYCLING OPPORTUNITIES PLAN

3.13.5 Private vehicles and traffic

The access system has been developed carefully to share traffic generated from the LSP area between the surrounding streets and intersections. In terms of volume, traffic estimates predict a total of 670 daily vehicular trips be generated from the development, including 63 trips during the PM peak weekday period. By comparison, the former school use generated approximately 742 total daily vehicular trips. Accordingly, the existing and proposed local road network will be able to support traffic generated from the proposed development.

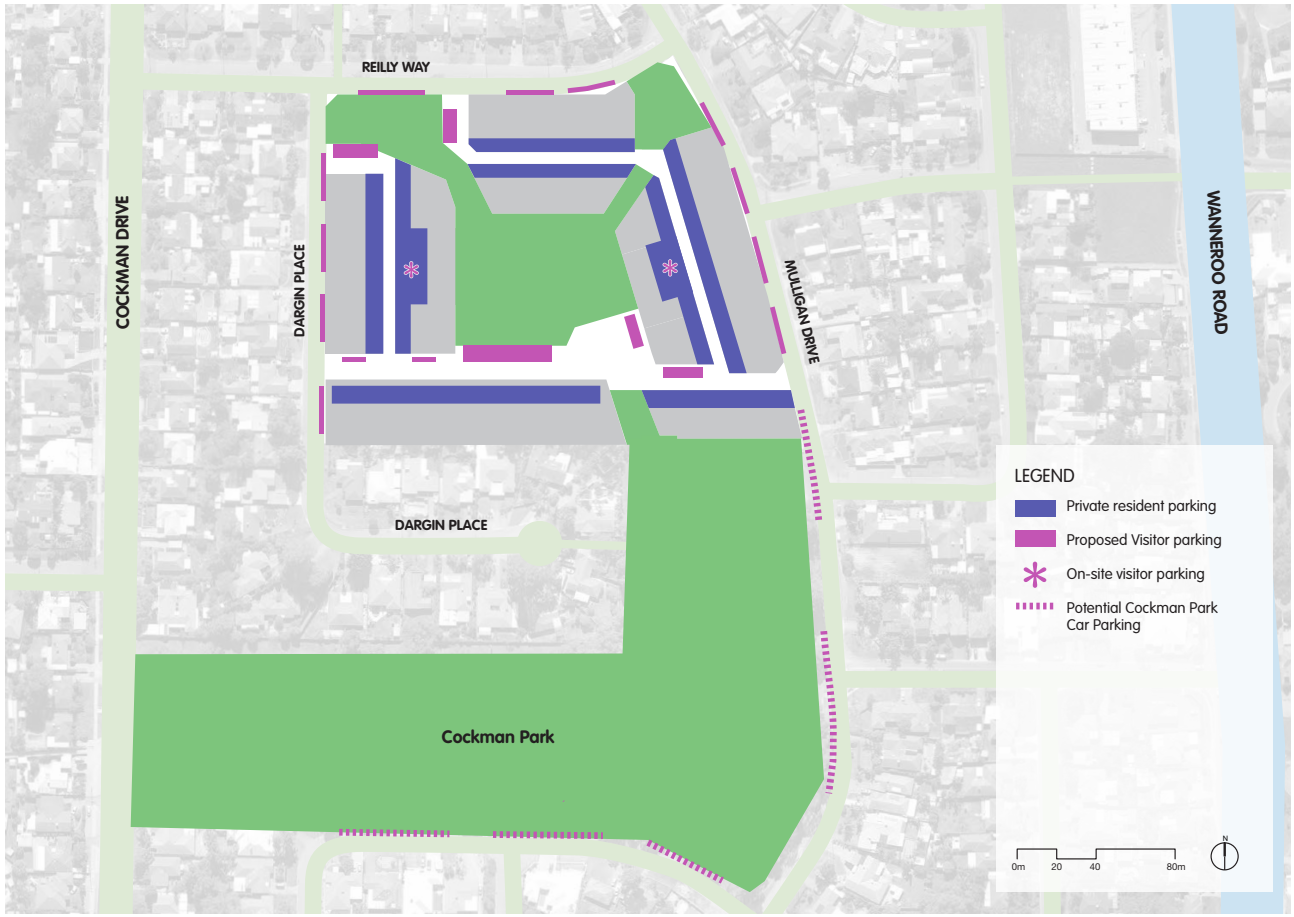
Refer Appendix 6, Traffic Impact Assessment.

3.13.6 Parking

All household car parking will be accommodated on-site within individual private land holdings. Visitor car parking is located to service the proposed dwellings and to provide opportunities for surveillance. The concept design provides car parking well in excess of the one visitor parking bay per four dwellings that would be required if the site works built out for a grouped dwelling (survey-strata) development.

Refer to Figure 28, Parking.

FIGURE 28: PARKING



3.14 WATER MANAGEMENT

In developing the storm water drainage design the intention is to incorporate appropriate Water Sensitive Urban Design and drainage best management practices for storm water and nutrient management at the site. This is to ensure there will be no unacceptable impacts on the existing local drainage infrastructure or the environment and that the site is protected from flooding.

Water wise processes for consideration at detail design stage of the process and subject to Council approvals may include water wise planting species, hydrozoned irrigation, use of rain sensors and water meters, use of alternate hardscape materials, minimized turf areas, use of low loss irrigation nozzles, soil amendments, porous surface treatments, additional mulching, storm communal bores, third pipe irrigation for private areas, water harvesting and reuse where viable.

One of the advantages of providing higher densities within the LSP area is that it allows for larger areas to be allocated for open space, creating sound opportunities for infiltration and retention on-site through permeable surfaces. This will be accomplished by utilising current best urban water practices within the development. Water for irrigation will be undertaken to promote cost effective water efficient practices through the open space designs.

The drainage design indicates a series of smaller catchments with a range of treatments including subsurface storage located under parking areas and smaller planted swales to capture and treat 1:1 flood events. 1:5 and 1:10 events may spill into open grass areas and will be held back from residential lots via slope and raised pad sites. The 1:100 drainage event will be managed off site via various head works.

3.15 INFRASTRUCTURE COORDINATION, SERVICING AND EARTHWORKS

3.15.1 Site Works

Demolition of the primary school buildings occurred between May and June 2011. While the surface of the site has been remediated, it is possible that undiscovered services, buried fences or similar may be present. As such, unexpected finds protocols are recommended as part of the construction works. Additionally, it is recommended that a forward works scope is implemented to reduce the risk of cross contamination for any existing services uncovered during the civil works process.

Refer Appendix 8, Servicing Strategy.

3.15.2 General earthworks

The site will be earthworked with the intent to minimise import fill requirements, improve lot accessibility and maximise the retention of trees. Construction of retaining walls are required tp ensure level building sites with specific planning and engineering consideration to minimise walls of significant height i.e. greater than 3m. Stair access will also be provided where required for lots with rear laneway access and fronting public open space.

A construction management plan, required as part of the subsequent detailed design application phase, will outline the intention and scope for the proponent to organize waste collections during the different stages of construction.

Refer Appendix 8, Servicing Strategy.

3.15.3 Infrastructure coordination and servicing

Wastewater

The LSP area is capable of being serviced by the existing reticulated sewer infrastructure, subject to the appropriate headworks charges and negotiations through the Water Corporation.

Water Supply

The LSP area is capable of being serviced by the existing reticulated water infrastructure, subject to the appropriate headworks charges and negotiations through the Water Corporation. Public Open Space irrigation can be serviced by ground water, with the option of transferring/renewing the necessary licence that managed the former school site, as suggested in initial engagement with the Department of Water (refer correspondence in Appendix 2 of the Environmental Summary Report at Appendix 4 of Part 3).

Power Supply

The LSP area is capable of being serviced by power infrastructure through Western Power, the service provider. In accordance with Western Power policy, all new development will need to be serviced by underground three phase power. As such, some of the existing infrastructure immediately surrounding the LSP area may need to be converted to the underground system. More specifically, Western Power identified the existing overheard power lines running along Dargin Place as a piece of infrastructure that may not achieve sufficient safety clearances. For this reason, the intent is to underground this section of powerlines, effectively negating the requirement for a safety clearance zone.

Gas Supply

The LSP area is capable of being serviced by the existing gas supply infrastructure, subject to the appropriate headworks charges and negotiations through ATCO Gas.

Telecommunications

The proposed development subject of this LSP falls within the Australian Government's National Broadband yield criteria, which aims to reticulate communication assets to all new developments over 100 lots. There may be some specific easements that will need to be considered at the detailed design stage.

Stormwater

The LSP area has excellent infiltration qualities, of which the design takes advantage of spatially through the application of large open space areas. As such, The LSP area is capable of accommodating the majority of stormwater onsite. Stormwater will generally be accommodated in a series of basins, where infiltration is not possible.

Refer Appendix 8, Servicing Strategy.

3.16 DEVELOPER CONTRIBUTION ARRANGEMENTS

No extraordinary provisions are planned for in relation to development contributions. The proposal is likely to attract the standard requirements typical of a development of this nature.

3.17 IMPLEMENTATION

3.17.1 Further documentation and management plans

To facilitate subdivision and development of the land, further studies and/or management plans are to be prepared, as applicable, to the satisfaction of the relevant authority as outlined in Table 6.

TABLE 6: FURTHER DOCUMENTATION AND ACTIONS

Documentation	Approval Stage	Approving Authority
Local Development Plan/s (for all lots)	Lodged prior to building permit stage, managed as a condition of subdivision approval.	City of Joondalup
Urban Water Management Strategy	Lodged prior to building permit stage, managed as a condition of subdivision approval.	City of Joondalup; Department of Water

3.17.2 Land assembly

The site subject of this LSP is ready for development and owned by the proponent for these purposes.

3.17.3 Indicative staging

The LSP area will generally be delivered in either one or two stages, depending on market demand. The intention is deliver the development with as little interruption and impact the surrounding community as possible. Given the ample space the site offers, it is considered that development will be able to achieve this with relative ease, subject to the appropriate management measures being in place at the detailed design phase.

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LEGEND

- Local Development Boundary
- Proposed Lot Boundaries
- Building Height : 1 Storey
- Building Height : 2 Storey
- Building Height : 3 Storey
- Garage Doors may span 70% of the Building Frontage
- Secondary Storey Highlight Windows
- Apartment Dwelling permitted above a Garage
- Primary Frontage
- Secondary Frontage Building Articulation
- 1.8m High Wall or Fence Treatment
- 1.0m Minimum Building Setback
- Habitable Room Window Orientation
- Tree Protection Zone

This Local Development plan has been adopted by Council at its meeting held:

Date.....

Greenwood Local Development Plan Provisions

1. Development that is entirely compliant with the provisions of this Local Development Plan (LDP) and any relevant deemed-to-comply provisions of the R-Codes does not require approval under the City of Joondalup District Planning Scheme No. 2 (the Scheme).
2. Any variations to the deemed-to-comply provisions, as outlined in this LDP, may be approved under the Scheme if they are considered to accord with the 'design principles' of the R-Codes, to the satisfaction of the City.
3. Development of dwellings identified as 'Apartment Dwelling permitted above a Garage' shall be assessed as Multiple Dwellings under Part 6 of the R-Codes.

This Local Development Plan amends/replaces/deletes the following 'deemed-to-comply' Residential Design Codes (R-Codes) development provisions, in accordance with clause 7.3.1 & 7.3.2 of the R-Codes, as outlined.

'Deemed-to-comply' R-Code provision	amend / replace / augment	Local Development Plan 'deemed-to-comply' provision
5.1.2 C2.1	replace	Buildings set back from the 'Primary Frontage' which is regarded as the primary street.
5.1.2 C2.1iii	delete	Not applicable.
5.1.6 C6 + 6.1.2 C2	amend/ replace	C6.1. Buildings which comply with Table 3 for category A area buildings, for lots shown on the plan as 'Building Height: 1 Storey'. C6.2. Buildings which comply with the following table, for lots shown on the plan as 'Building Height: 2 Storey' and 'Building Height: 3 Storey' **Maximum building heights** — 2 Storey — 3 Storey Tops of external wall (roof above) (ii) — 7m — 10m Tops of external wall (concealed roof) — 8m — 11m Top of pitched roof — 10m — 13m C6.3. For Ancillary Dwellings only, placed within lots shown on the plan as 'Building Height: 1 Storey' buildings may comply with the '2 Storey' requirements outlined in the table shown in ii. above.
5.2.1 C1.3	amend/ replace	Garages and carports setback 1.0m from the boundary abutting a right-of-way which is not the primary or secondary street boundary for the dwelling, with manoeuvring space of at least 6m located immediately in front of the opening to the garage or carport.
5.2.2 C2	amend/ replace	For lots designated as 'Garage Doors may span 70% of the Building Frontage' only, where a garage is located in front or within 1m of the building, a garage door and its supporting structures (or a garage wall where a garage is aligned parallel to the street) facing the primary street is not to occupy more than 60 per cent of the frontage at the setback line as viewed from the street. This may be increased to 70 per cent where an upper floor or balcony extends for the full width of the garage and the entrance to the dwelling is clearly visible from the primary street.
5.2.3	amend	C3.3 Lots labelled with 'Habitable Room Window Orientation' shall provide at least one major opening from a habitable room of the dwelling that faces the direction shown on the plan, in addition to the standard R-Codes provisions.
5.3.3 C3.1 + 6.33 C3.1	replace	The minimum number of on-site car parking spaces to be provided for single houses, grouped dwellings, special purpose dwellings, and multiple dwellings shall be in accordance with Location A.
5.3.5 C5.3 (first dot point)	replace	Driveways may abut lot boundaries, provided they are no closer than 0.5m from a street pole.
5.4.1 C1.1i	replace	In addition to the R-Codes provisions of 5.4.1 C1.1i: - Lots affected by 'Secondary Storey Highlight Windows' on the plan do not provide any windows with a sill height less than 1,650mm for the elevation facing south. - For major openings and unenclosed outdoor active habitable spaces which have an outlook toward the public realm within front setback areas, the cone of vision line of sight set back requirements does not apply, in the event they may affect adjoining lots.
5.4.2 + 6.4.2	delete	Not applicable.
5.5.1 C1	amend	In addition to the R-Codes provisions no more than a maximum total of 5 lots within the LDP area shall accommodate an Ancillary Dwellings.
5.5.1 C1ii	delete	Not applicable.
6.1.4	replace	Side setbacks for Multiple Dwellings shall be a minimum of 1.5 metres.

As provided in clause 9.12.2 of the Scheme, this Local Development Plan includes additional design details as outlined.

LDP reference	Scheme ref.	Local Development Plan design detail
'Secondary Frontage Building Articulation'	cl. 9.12.2 (f, j)	Building frontages designed to wrap the corner within the area designated on the plan as 'Secondary Frontage Building Articulation', requiring buildings to address both frontages through the use of one or more architectural features including windows/openings, verandahs/porches/balconies, alternative materials, and/or relief in building mass. In addition, boundary walls or fences shall be visually permeable above 1.2m of the natural ground level, for the area designated on the plan as 'Secondary Frontage Building Articulation'.
'Tree Protection Zone'	cl. 9.12.2 (a, i)	Building envelopes shall not encroach into the area marked as the 12 metre wide 'Tree Protection Zone'. Approval under the Scheme is required for any small structures, such as sheds, decks, pools and pergolas proposed within the zone. The application will need to be accompanied by an arborist report that demonstrates no adverse impact to the health of a tree(s) within the zone, unless waivered by the City where it is clear that no potential impact exists.
'1.8m High Wall or Fence Treatment'	cl. 9.12.2 (j)	Appropriate 1.8m High Wall or Fence Treatments to include rendered brick walls, the use of timber panels, or a combination of both, and shall not include colorbond or hardifence fencing or similar.
n/a	cl. 9.12.2 (e)	Vehicular access shall be provided from internal roads only.

great places_
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1:1000 SIZE A3 0 metres 10 20 30 40 50

REV	DESCRIPTION	YYMMDD	DRAWN	APPR'D
K	CITY MANAGER MODS	150731	ED	AB
J	CAR PARKING STANDARDS	150714	ED	DW
I	TEXT MODS	150713	RF	AB
H	PUBLIC CONSULT MODS	150617	RF/ED	AB
G	TEXT MODS	150309	RF	AB
F	TEXT AND LEGEND MODS	150306	RF	AB
E	TEXT AND LEGEND MODS	150305	RF	AB

GREENWOOD LOCAL DEVELOPMENT PLAN
63 Mulligan Drive, Greenwood
City of Joondalup

REF NO.	DRAW NO.	REV.
AST GRE	**RD1 400**	**K**

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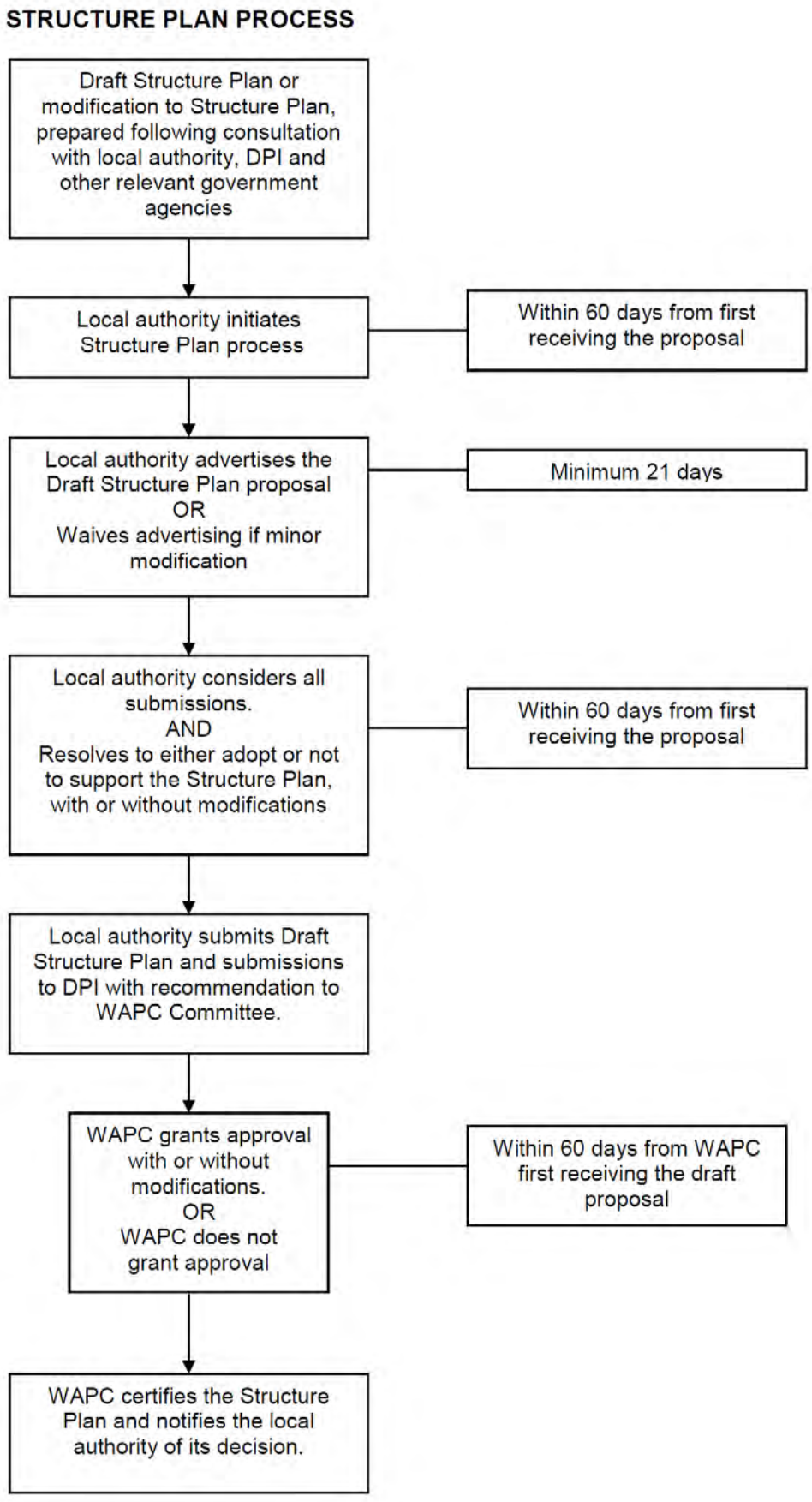
Structure plan process flow chart

ATTACHMENT 6



Consultation map

ATTACHMENT 7

lot9867_63mulligan-advertising-12032015

NO	NAME AND ADDRESS OF SUBMITTER (AND ADDRESS OF AFFECTED PROPERTY IF NOT OCCUPIER)	SUBMISSION SUMMARY	ADMINISTRATION COMMENTS
1	Western Power (not applicable)	In regard to the network capacity, currently the Greenwood area is showing a reasonable amount of network capacity. However, in view of what is proposed in the Structure Plan, this will need to be reviewed. It is recommended that a feasibility study be undertaken to confirm future distribution network provisions. With respect to encroachment, it is noted that an overhead distribution line borders the proposed development in Dargin Place and to ensure there is no encroachment a clearance zone is required. For distribution lines, Western Power typically requires a clearance zone of 3 metres either side of the centre line.	Noted. Noted.
2	C Sappelli 1 Smallman Crescent GREENWOOD WA 6024	The Traffic Impact Assessment has concentrated its findings of access/egress on what would appear to be an assumption that all traffic will be emanating from the south along either Cockman Road into Mulligan Drive, or Cockman Road into Reilly Way or Wanneroo Road and into Mulligan Drive. It should also be noted that Gorman Street is used as a rat run by traffic travelling south along Wanneroo Road to avoid the traffic lights at the Marangaroo and Warwick intersections. There is no mention of the likely impact on traffic on surrounding streets such as Swift Street, Smallman	Section 7.2 of the Transport Impact Assessment outlines the affect of the traffic generated from the proposed development on the external road network. Gorman Street is classified as an Access Road with a capacity of catering for 3000 vehicles per day. Despite the current traffic volumes being well under the capacity, with 1200 vehicles per day, Gorman Street has a reputation of being a rat run route. Therefore, to maintain a conservative approach and achieve a robust outcome to the Traffic Impact Assessment, all traffic approaching to and from Wanneroo Road was assumed to be using Gorman Street, whereas the use of Daley Street for accessibility is also a viable option. Consideration of Daley Street in this assessment would

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		Crescent and Daley Street. The plan has not addressed traffic wishing to access/agree coming from the north or going to the north from the development site along Wanneroo Road. Vacant land between Wanneroo Road and Smallman Crescent could be resumed to allow direct access/egress through Swift Street to the proposed development.	only take pressure off Gorman Street and result in further minimal impact on the existing road network. It is to be noted that a detailed capacity analysis of the structure plan's access intersections on adjacent roads is not warranted as the anticipated traffic volumes through these future access intersections are significantly below the relevant thresholds. The City has reviewed the Traffic Impact Assessment and is comfortable that the traffic volumes generated by the development can be accommodated by the existing road network. The capacity assessment for post development peak periods suggests that the traffic from the proposed structure plan will have minimal impact on the operation of external intersections. Noted.
3	Shahram Haftlang Email address provided	Considers that this plan will bring a fresh life-style to the area. Concerned that the high zone change for a small area will affect the existing blocks and the new development should have the same zone as the rest of the Greenwood suburb. If R40 is permitted for one lot, then existing lots should also be R40. However, they are	Noted. The structure plan provides for development at a range of densities with associated road networks and public open space (POS). The proposed densities, provision of POS and the structure plans provisions provide for a development area which will be in keeping with the existing character of the area as well

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		strongly against R60/R80 as this will highly affect the life-style of the suburb.	as the delivering the State Government's aspirations set out in *Directions 2031 and Beyond* and draft *Outer Metropolitan Perth and Peel Sub-Regional Strategy*. The heights of buildings have been restricted in the LDP to alleviate any impact from the immediate transition to the higher density codes from the surrounding R20 coded lots. Apart from the inclusion of 'apartment dwellings' on some lots, two storey buildings are only permitted along the southern boundary and around the central open space area. A limited number of three storey multiple dwellings are permitted internal to the site, framing the eastern and western side of the central park area. The southern lots directly adjacent to existing residential development within Dargin Place will have the lower density code of R40. The LDP also proposes for dwellings on these lots to have a minimum rear setback of 12 metres from the rear boundary to alleviate concerns regarding privacy and overlooking. While the structure plan proposes R60 coded lots directly opposite R20 coded existing residential development to the west, north and east of the site, the LDP requires, for the most part, a single-storey R60 interface to the existing residential development. It is, therefore, considered that the densities and building heights proposed are appropriate and will not impact the amenity of existing adjoining residential development.
4	Rebecca Joel	Outlines that the Structure Plan stated that the traffic	Noted.

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	Email address provided	flow would not be affected as, when the East Greenwood School was in operation, parents would drive their children to school. However, most children in East Greenwood walked or rode their bikes every day. As the closest school is now further away more children may be driven to school and with the increase in population with the proposed new housing, this will only increase the amount of traffic on the roads. Cockman Road operates as a District Distributor Road but authorities consider it as a Local Distributor Road. East Greenwood is surrounded by major roads and trying to exit from local streets is getting increasingly more dangerous. The intersection on the corner of Cockman Road and Warwick Road on the north-east side has no pedestrian walk symbols and Cockman Road is the main access road to reach the Warwick Leisure Centre, High School and Shopping Centre. If we want to encourage more people to walk, then this must be made safer. Most residents do not want anything over two storeys.	Section 4.1 of the Transport Impact Assessment confirms the road hierarchy of Cockman Road to be Distributor B, which is in line with Main Roads WA Perth Metropolitan Area – Functional Road Hierarchy. Noted. A limited number of three storey multiple dwellings are permitted internal to the site. However, to ensure integration with the surrounding area, the LDP requires, for the most part, a single-storey interface to the existing residential development.

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		Greenwood has always had a choice of smaller homes.	Noted.
		There is a loss of education choices in Greenwood. How will schools cope with the extra numbers?	The Department of Education manages public education facilities and will need to accommodate future school population growth.
		Power lines are in a state of disrepair in Greenwood. Will this development put more pressure in ageing infrastructure?	Service authorities have provided comment on both proposals, with no significant concerns raised in regard to infrastructure pressure and provision for the future.
		Asbestos may not have been handled correctly during the demolition of the school, are there still remnants in the soil on the proposed site? Existing residents should have access to an asbestos register.	All asbestos removal is subject to the provisions of the *Health (Asbestos) Regulations 1992,* which cover asbestos removal, handling and disposal. Additionally there are licensing requirements imposed by the Department of Commerce Worksafe section for all asbestos removal greater than 10m2 of non-friable asbestos to be undertaken by a licensed person. The appropriate removal of asbestos in line with the above during the demolition of the school is the responsibility of the Department of Education.
		How will the developer handle safety issues i.e. fences erected around the site and contractors inducted into the site?	The developer/landowner will be responsible for ensuring that the site is safe and secure.
		Who is responsible for the ongoing maintenance of these properties?	The landowner(s) will be responsible for the maintenance of the future properties.
		Is the Department of Housing giving the correct	

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		information? How will the public transport system cope with more residents? Can Greenwood sustain more residents and is there employment available for them?	The City has a responsibility under *Directions 2031 and beyond* to consider accommodating additional residents within the existing urban area in order to assist in reducing 'urban sprawl' and the associated environmental impacts. The draft structure plan will also assist in providing a variety of housing choices to cater for changing demographics. Service authorities and government agencies have provided comment on both proposals, with no significant concerns raised in regard to infrastructure pressure and provision for the future.
5	D Blackburn 15 Celina Court KINGSLEY WA 6026	The LDP does not provide for any detail on the control process for the tree protection zone. It is good to see a different development approach which values a significant number of existing trees and does not resort to the clearing of the whole site. The provision of a much higher proportion of Public Open Space is also a welcome innovation that will provide a greater overall benefit to the Village. The Aboricultural Assessment was prepared in July 2012 and does not address the Local Structure Plan concept design. There is no table or image showing	The amended LDP clarifies that building envelopes shall not encroach into the 'Tree Protection Zone' area on residential lots. However, small structures can be considered through a Development Application, which needs to be accompanied by an arborist report that demonstrates no adverse impact to the health of the trees within this zone. Noted. The appropriateness of retaining particular trees in the public open space cannot be adequately determined at this stage of the planning process as the necessary level of detail associated

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		which trees will be retained under the LSP. What measures will be taken during earthworks and construction to protect the trees identified for retention?	with the site works have not yet been determined. Figure 5 in Part 2 of the structure plan indicates the retention value of the trees on the structure plan site and subsequently which trees will be considered for retention. At the subdivision stage those trees identified for retention will be considered. However, this will be influenced by factors such as the topography of the site and the extent and location of works required to be carried out. In accordance with the structure plan provisions, those trees approved for retention through the subdivision stage will be required to be retained, whether in public open space, road reserves or private property, unless deemed to be a safety hazard by an approved arboriculture expert to the satisfaction of the City. The intent of the advertised LDP was that no development that would affect the significant trees within the 'Tree Protection Zone' would be permitted. The LDP has been modified to include a provision to clarify this.
		The Traffic Impact used Cockman Rd Traffic data from 2008/2010 and discounts it for the school closure when data from measurements post school closure made in October 2013 are available from the City of Joondalup. The impact assessment should have used the most up to date measurements. It should conclude that the outcome of the proposed residential development results in 670vpd more overall traffic on the surrounding road network compared to the current	Noted. As outlined above, the City has reviewed the Traffic Impact Assessment and is comfortable that the traffic volumes generated by the development can be accommodated by the existing road network.

<table>
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<tr><td></td><td></td><td>situation.

The calculation basis used in Table 5 refers to a Roads and Traffic Authority NSW, “Guide to Traffic Generating Developments” document. It appears to use section “3.3.2 Medium density residential flat building” of that document which suggests trip generation rate ranges based on size of residential unit. The values used in Table 5 are not always the upper level of the range. If the upper ranges are used then the Total line in Table 5 would be ‘Total Peak Hour Traffic’ =71 and ‘Total Daily Traffic’ =675.

The R40 part of the site would probably have relatively large houses. The relevant traffic impact for such dwellings would be “3.3.1 Dwelling houses” with rates as follows: ‘Daily vehicle trips’ = 9.0 per dwelling, ‘Weekday peak hour vehicle trips’ = 0.85 per dwelling. These should have been calculated at the higher rate rather than being included as a “Medium density residential flat building” type.

Intuitively, if there are 126 dwelling units occupied mostly by working people you would expect in reality that total peak hour trips would be higher than 71. There is likely to be more traffic than Table 5 forecasts. It is unlikely that the bus service on Cockman Rd would divert many people from using cars.</td><td>Roads and Traffic Authority NSW, “Guide to Traffic Generating Developments” is adopted as an appropriate standard and the rates outlined in the document are accepted across Australia. According to RTA Guide to Traffic Generating Developments the trip rate per unit is as follows:

<table>
<tr><th>Density</th><th>Trip Rate (Peak)/Unit</th><th>Trip Rate (Daily)/Unit</th></tr>
<tr><td>Low (<R25)</td><td>0.85</td><td>9.0</td></tr>
<tr><td>Medium (R30-R60, up to 2 bedrooms)</td><td>0.4-0.5</td><td>4.5</td></tr>
<tr><td>Medium (R30-R60, >3 bedrooms)</td><td>0.5-0.65</td><td>5.0-6.5</td></tr>
<tr><td>High (>R80)</td><td>0.29</td><td>N/A</td></tr>
</table>

Collaboration of the Density, R-codes, RTA rates and Trip rates used for this assessment:

<table>
<tr><th>Density</th><th>Trip Rate (Peak)/ Unit</th><th>Trip Rate (Daily)/ Unit</th><th>Trip Rate Used</th></tr>
<tr><td>Low (≤R25)</td><td>0.85</td><td>9.0</td><td>N/A</td></tr>
<tr><td>Medium (≥3 bedrooms, R30-R60)</td><td>0.65 - 0.5</td><td>6.5- 5.0</td><td>0.60</td></tr>
</table>
</td></tr>
</table>

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<tr><td></td><td></td><td></td><td>
<table>
<tr><td>Medium (≤2 bedrooms, R30-R60)</td><td>0.5 - 0.4</td><td>4.5</td><td>0.45</td></tr>
<tr><td>High (≥R80)</td><td>0.29</td><td>N/A</td><td>N/A</td></tr>
</table>

Given that the proposed development consists of no low density residential development, the use of medium density rates is considered appropriate. In addition, it is to be noted that the proposed development predominantly (Approx. 50%) comprises of R80 residential development units. However, the traffic assessment has only considered average rates for medium density developments, hence confirming a conservative approach adopted for the Trip Generation estimates. It is also to be noted that 75% of the proposed medium density developments are classified as R60 while only 25% relates to R40. The combination would suggest the use of lower limit rate for medium density development is more appropriate. Therefore, the use of an average rate for future trip estimates is considered conservative.

The City cannot enforce the upkeep of landscaping within private property.

The structure plan reflects this intention (Figure 27: Pedestrian & Cycling Opportunities Plan).</td></tr>
</table>

The City has indicated that they would not maintain landscaping in lanes and hence the maintenance of any landscaping within the lane-ways becomes the responsibility of the private landowner. How will this be enforced?

Will the paths on the boundary of the Local Structure Plan be upgraded to a Shared Path Standard?

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		Will the Public Open Space be the responsibility of the City of Joondalup to maintain? Will a Special Area Rate be levied on residents to pay for a higher standard of maintenance? Will the POS be irrigated and is a water allocation available? Will properties not in the local structure plan area but outside on Dargin Place, Reilly Way and Mulligan Drive be connected to any new mandated local underground power system at no cost?	There will be a two-year period of maintenance by the developer prior to hand-over of responsibility for ongoing asset management to the City. This will be considered further during the detailed design and subdivision stage of the planning process. A landscape plan and management plan will be required as a condition of subdivision. At this point in time these matters will be considered. Western power manages this infrastructure and will need to accommodate future population growth and infrastructure upgrades for the future.
6	The Secretary Kingsley and Greenwood Residents Association Inc Email address provided	The Department of Housing and its partner Australand executed a comprehensive community engagement process in response to the great interest shown by the local community in the project. The detailed input provided by the Community has enhanced the Local Structure Plan. The Project Social Media, Facebook and Website should be maintained during the duration of the construction and sales period to assist effective communication with the local community	Noted.
7	Alex McGlue Levan Legal	Generally supportive of the Structure Plan in as it will promote the redevelopment of under-utilised land and	Noted.

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	On behalf of Parin Group of Companies 1 Willliams Street PERTH WA 6000	the diversification of housing options. The rezoning and redevelopment of the Submitter's vacant residential lots will prevent residents within the Structure Plan area from using their land to access the bus stops on Wanneroo Road. The rezoning and redevelopment of the submitter's land would present an opportunity to formalise permanent pedestrian connectivity between the Structure plan area and Wanneroo Road. Therefore, the Structure Plan is supported on the basis that the City should use its implementation as a precedent to support the rezoning and redevelopment of the Submitter's landholdings in the immediate vicinity.	Noted. However, the City's support of the structure plan is not a precedent for the redevelopment or rezoning of other areas.
8	T Brandwood 38A Dargin Place GREENWOOD WA 6024	Concerned with the interface between the structure plan area and abutting residential properties, as there is a drop from the structure plan area to the Submitter's property. They require confirmation that the 12 metre setback prevents the construction of structures such as granny flats or small offices/business. No structure other than a small garden shed or kids cubby house type format should be permitted.	The necessary level of detail associated with the site works will be determined during the subdivision stage of the planning process, based on the subdivision works necessary for the site. The amended LDP clarifies that building envelopes shall not encroach into the 'Tree Protection Zone' area on residential lots. However, small structures can be considered through a Development Application, which needs to be accompanied by an arborist report that demonstrates no adverse impact to the health of the trees within this zone.

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		They require clarification on the intended heights of all the buildings and whether or not the City's *Height and Scale of Buildings within Residential Areas* Policy applies. They are concerned that tall trees have been deemed as medium value and therefore will be removed, while the smaller trees have been considered high value. Figure 18 in Part 2 of the Structure Plan needs to be amended so that Dargin Place is correctly identified.	The City's Policy *Height and Scale of Buildings within Residential Areas* will not apply and maximum building heights are as per the revised LDP. See submission 5 comments. Noted, Figure 18 has been amended to ensure that Dargin Place is correctly identified.
9	Department of Water (not applicable)	There is no groundwater available for public open space (POS) irrigation. An alternative water source needs to be sourced for irrigated POS.	Noted.
10	Manager, Land Planning Water Corporation (not applicable)	The Water Corporation has assessed the Structure Plan and although the proposed R codes are higher than the planned R20 for the primary school, the existing water and wastewater infrastructure has capacity to serve the 135 dwellings proposed by this Structure Plan.	Noted.
11	Department of Planning (not applicable)	Further justification should be provided for the allocation of the higher densities at the specific location, which is not in close proximity to railway stations or major centres and where the density of the established residential area is R20.	*Liveable Neighbourhoods* requires that a structure plan layout should ensure the integration of new areas, as far as practical, with existing development. In this instance, it is considered that the proposed density range will provide an appropriate transition from the current surrounding low density development outside

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			the structure plan area. The heights of buildings have been restricted in the LDP to alleviate any impact from the immediate transition to the higher density codes from the surrounding R20 coded lots. Apart from the inclusion of 'apartment dwellings' on some lots, two storey buildings are only permitted along the southern boundary and around the central open space area. A limited number of three storey multiple dwellings are permitted internal to the site, framing the eastern and western side of the central park area. The southern lots directly adjacent to existing residential development within Dargin Place will have the lower density code of R40. The LDP also proposes for dwellings on these lots to have a minimum rear setback of 12 metres from the rear boundary to alleviate concerns regarding privacy and overlooking. While the structure plan proposes R60 coded lots directly opposite R20 coded existing residential development to the west, north and east of the site, the LDP requires, for the most part, a single-storey R60 interface to the existing residential development. It is, therefore, considered that the densities and building heights proposed are appropriate and will not impact the amenity of existing adjoining residential development.
		The Structure Plan shows one access road connection to the surrounding road network, with the rest of the connections consisting of laneway access points.	The street types have been designed in accordance with *Liveable Neighbourhoods* and will be designed to accommodate traffic through the area as well as on-street parking, footpaths,

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		Consideration should be given to an appropriate internal movement network that is legible and provides adequate connections to the surrounding road network.	street trees and lighting. It is considered positive that the development is not car centric, with a stronger emphasis on pedestrian connectivity across the site and between the surrounding residential areas. This is emphasised by the Illustrative Master plan in Part 2, which shows a good network of pedestrian paths and view corridors that leave the internal open space visible and easily accessible to the surrounding residents.
		Consideration should be given to the interface treatment of the structure plan area with Cockman Park in terms of amenity, safety, public access and adequate on-street parking.	Noted. This will be considered further during the detailed design and subdivision stage of the planning process.
		Any variations to the R-Codes are to be consistent with the WAPC's Planning Bulletin 112/2015 *Medium density single house development standards – Structure plan areas.*	Noted.
		The LSP map should be prepared in accordance with the WAPC's *Digital Data and Mapping Standards,* with specific regard to Appendix 1 *Structure Plan Mapping.*	Noted.
		The purpose of the previous submission is to provide preliminary comments on the Structure Plan based on an initial assessment. The intent of the Department comments in relation to residential density is to ensure that sufficient justification is provided by the proponent in relation to the allocation of densities within the Structure Plan.	Noted.

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		A comprehensive assessment will be undertaken when the structure plan is formally submitted to the WAPC for its determination.	