great places_

GREENWOOD

LOCAL STRUCTURE PLAN

JANUARY 2016

Government of Western Australia
Department of Housing

OPENING DOORS
To Affordable Housing

australand

A member of
FRASERS CENTREPOINT

S

MPLEMENTATION SECTION

PART TWO EXPLANATORY SECTION

PART THREE TECHNICAL APPENDICES

This structure plan is prepared under the provisions of the
City of Joondalup District Planning Scheme No. 2

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

15 - FEB - 2016
Date

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

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

Witness

17/2/16.
Date

15 - FEB - 2026 Date of Expiry

NDMENTS

	Summary of the Amendment	Amendment Type	Date approved by the WAPC

E SUMMARY

	Data	Section number referenced within the structure plan report
covered by the structure	3.8636 hectares	Part 2 Section 1.2.4
ch land use proposed: al ial	 3.0393 hectares 0 0	Part 2 Section 3.6.1
ot yield	95-105 lots	Part 2 Section 3.4
number of dwellings	115 - 135 dwellings	Part 2 Section 3.4
population	250-270 people	Part 2 Section 3.4
high schools	0	Part 2 Section 3.11
primary schools	0	Part 2 Section 3.11
area of open space	25%	Part 2 Section 3.6.1
esidential site density	29 dwellings per site hectare	Part 2 section 3.4

ucture Plan report has been prepared on behalf of Australand and the of Housing, the sentiment is understood, however the City remains the dy of the structure plan, in order to accommodate urban residential t on the former East Greenwood Primary School site. The LSP establishes a e local road network, residential development sites and open spaces that ed and integrated with surrounding development.

intent of the project is for the Department of Housing, working in with the private sector, to deliver a showcase infill development that m the strengths of each party. This will provide the East Greenwood

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
IMPLEMENTATION SECTION

PLEMENTATION SECTION

PLAN AREA

e Structure Plan apply to Lot 9867 (63) Mulligan Drive, Greenwood
ained within the inner edge of the line denoting the Structure Plan
ucture Plan Map.

PLAN CONTENT

omprises three parts;
lementation Section
lanatory Section; and
s – Technical Reports.

re Plan comes into effect is the date the Structure Plan is approved

4.0 SUBDIVISION AND DEVELOPMENT REQUIREMENTS

4.1 SUBDIVISION AND DEVELOPMENT

The Structure Plan map outlines land use zones and reserves applicable within the structure plan area in accordance with the zones and reserves listed in the Scheme.

4.2 MINIMUM DWELLING YIELD

Residential development within the Structure Plan area shall provide for a minimum of 115 dwellings.

4.3 DENSITY TARGET

Subdivision to be in accordance with the density code depicted on the Structure Plan Map.

4.4 PUBLIC OPEN SPACE

Public open space is to be provided generally in accordance with the Structure Plan map (Plan 1) and the Public Open Space Schedule included in Part Two, with an updated Public Open Space Schedule to be provided at the time of subdivision for determination by the WAPC, upon the advice from the City of Joondalup.

Tree retention in Public Open Space is to be considered based on the Arboriculture Assessment of the Structure Plan and in the context of a Landscape Management Plan to be submitted for approval to the City, as required by a condition of subdivision.

E: IMPLEMENTATION SECTION

ITIONAL INFORMATION

g documentation is to be provided in accordance with the table below.

Information	Approval Stage	Approving Authority
ule	Subdivision application	City of Joondalup/WAPC
er ent Plan	Condition of subdivision approval	City of Joondalup/ Department of Water
Management	Condition of subdivision approval	City of Joondalup

AL DEVELOPMENT PLANS

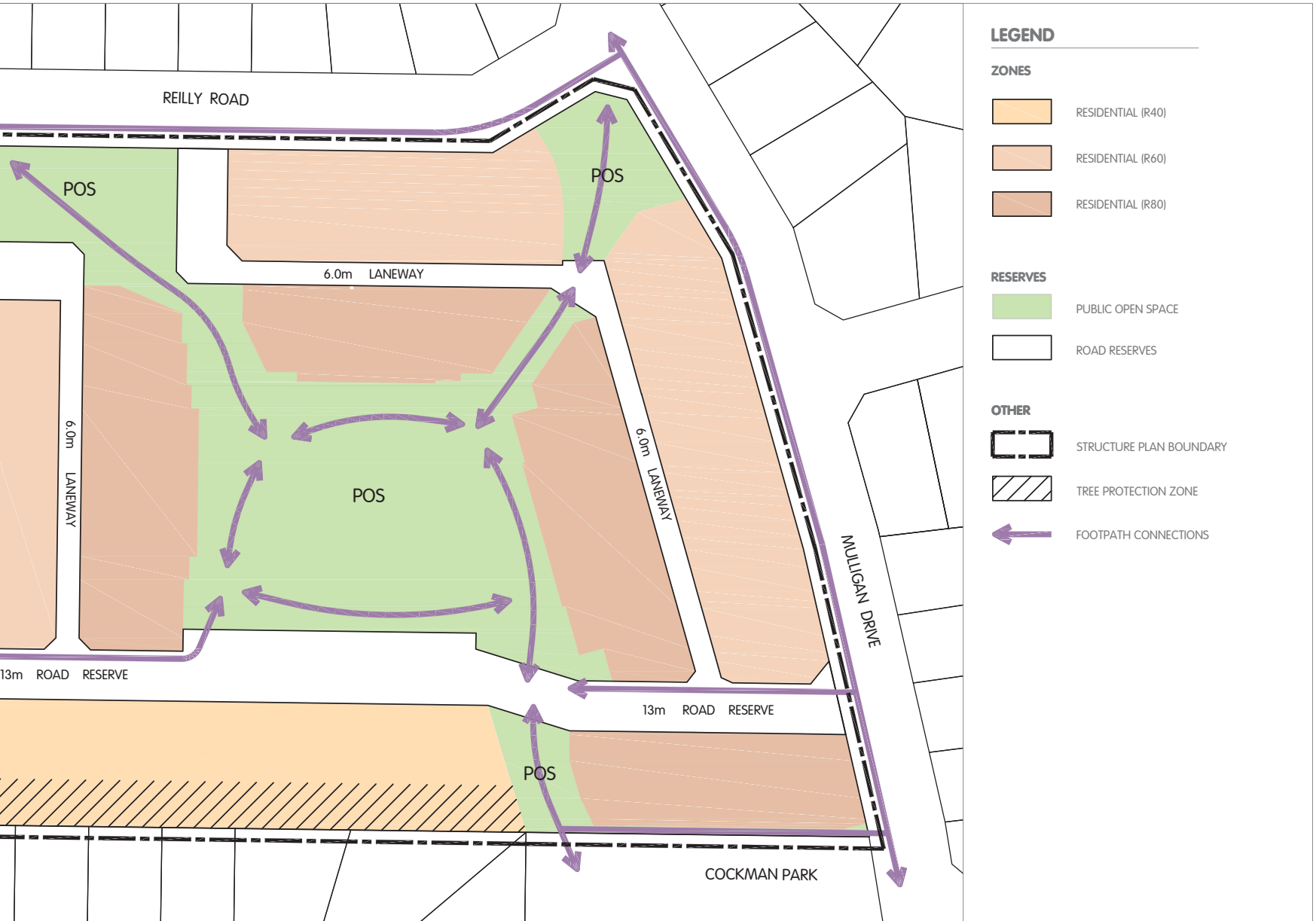
Development Plan(s) are to be prepared in accordance with the Scheme to any subdivision and/or development within the structure plan area.

dition to any general matters required to be included in a Local opment Plan under the Scheme, Local Development Plan(s) are to ess:

uilt form, height and scale, in accordance with the Illustrative Master Plan ncluded in Part Two of the LSP;

niform fencing for lots directly abutting POS that is of appropriate eight and character, and achieves visual permeability and appropriate elationship to the parkland;

rientation and design of built form and major openings to achieve assive surveillance of the street and/or the parkland.



LEGEND

ZONES

- RESIDENTIAL (R40)
- RESIDENTIAL (R60)
- RESIDENTIAL (R80)

RESERVES

- PUBLIC OPEN SPACE
- ROAD RESERVES

OTHER

- STRUCTURE PLAN BOUNDARY
- TREE PROTECTION ZONE
- FOOTPATH CONNECTIONS

PART TWO
EXPLANATORY SECTION

PLANATORY SECTION

BACKGROUND

ON

Plan (LSP) has been prepared to facilitate residential development reenwood Primary School site at 63 Mulligan Drive, Greenwood.

explanatory section of the LSP report is to provide background on P; an overview of features on the site and its context; indicative te urban form; compliance with relevant planning requirements; ct implementation. In particular, the LSP report demonstrates how n formulated based on a concerted community consultation and

ontained 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.

O: EXPLANATORY SECTION

L PHOTOGRAPH

PLANATORY SECTION

RIPTION

Context

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

in the City of Joondalup municipality.

ext

a is approximately 680 metres south of Lake Goollelal and 750 rwick Open Space. The LSP area is approximately 580 metres venue, 260 metres west of Wanneroo Road, and 670 metres north he Mitchell Freeway is approximately 2.5 kilometres to the west of

nded by Dargin Place to the west, Reilly Way to the north, and e east. Cockman Park shares part of the site's southern boundary. ed park contributes to Greenwood's character and amenity, but ilities.

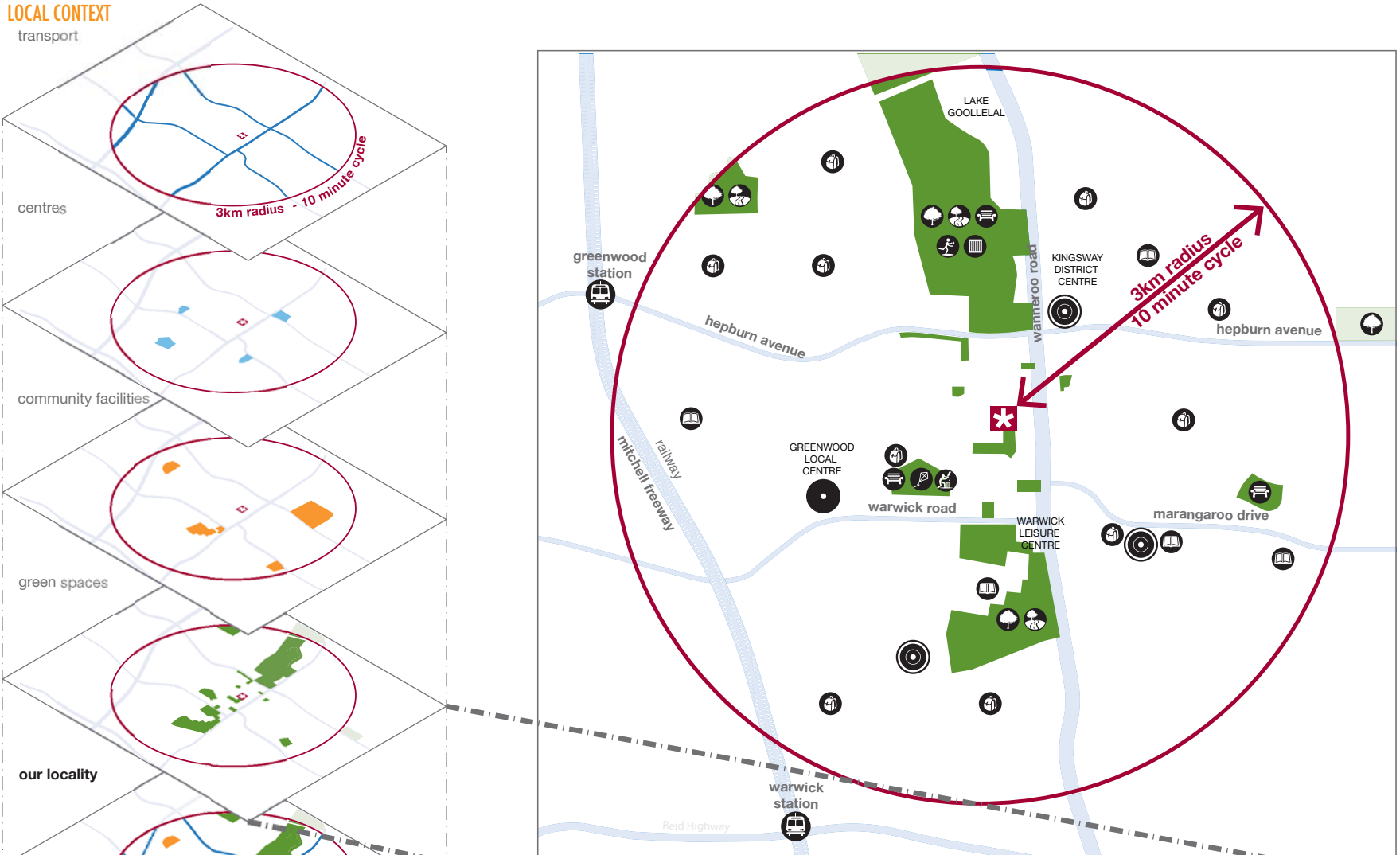
iced by the Greenwood Primary School, which is a combination reenwood Primary School and Allenswood Primary School. y School is approximately 750 metres west of the LSP area. rangaroo Primary School is approximately 750 metres east of tside the school's 'intake area' as defined by the Department of ster 2 of 2014, the Department of Education's database listed 327 r Greenwood Primary School, with a capacity of 465 students. be further expanded when grade 6 and 7 students transition to n 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.

O: EXPLANATORY SECTION



PLANATORY SECTION

Land Use

ality is typically characterised by low-density single detached s. Some examples of grouped dwelling duplex developments red throughout the locality. Small-scale vehicle orientated re located on Wanneroo Road, approximately 150m east of the site.

e home of Perth Disc Golf Club, accommodating a '9 basket' car park was historically utilised by disc golfers, being located near he south east of the site.

n of the buildings and structures associated with the former school LSP area has been left vacant. Unfettered pedestrian access to isted since this time. Community feedback suggests that the site ed for dog walking and disc golf parking.

rge cleared areas of planted lawn with stands of parkland cleared y to the north west and central areas of the site.

he LSP area is generally uniform with the gradient slightly proximately 37.6m AHD (Australian Height Datum) in the site's imum of approximately 33.4m AHD in the north-east and north

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

D: EXPLANATORY SECTION

NNING FRAMEWORK

ning and Reservations

tropolitan Region Scheme

ovisions of the Metropolitan me (MRS) the LSP area is n'.

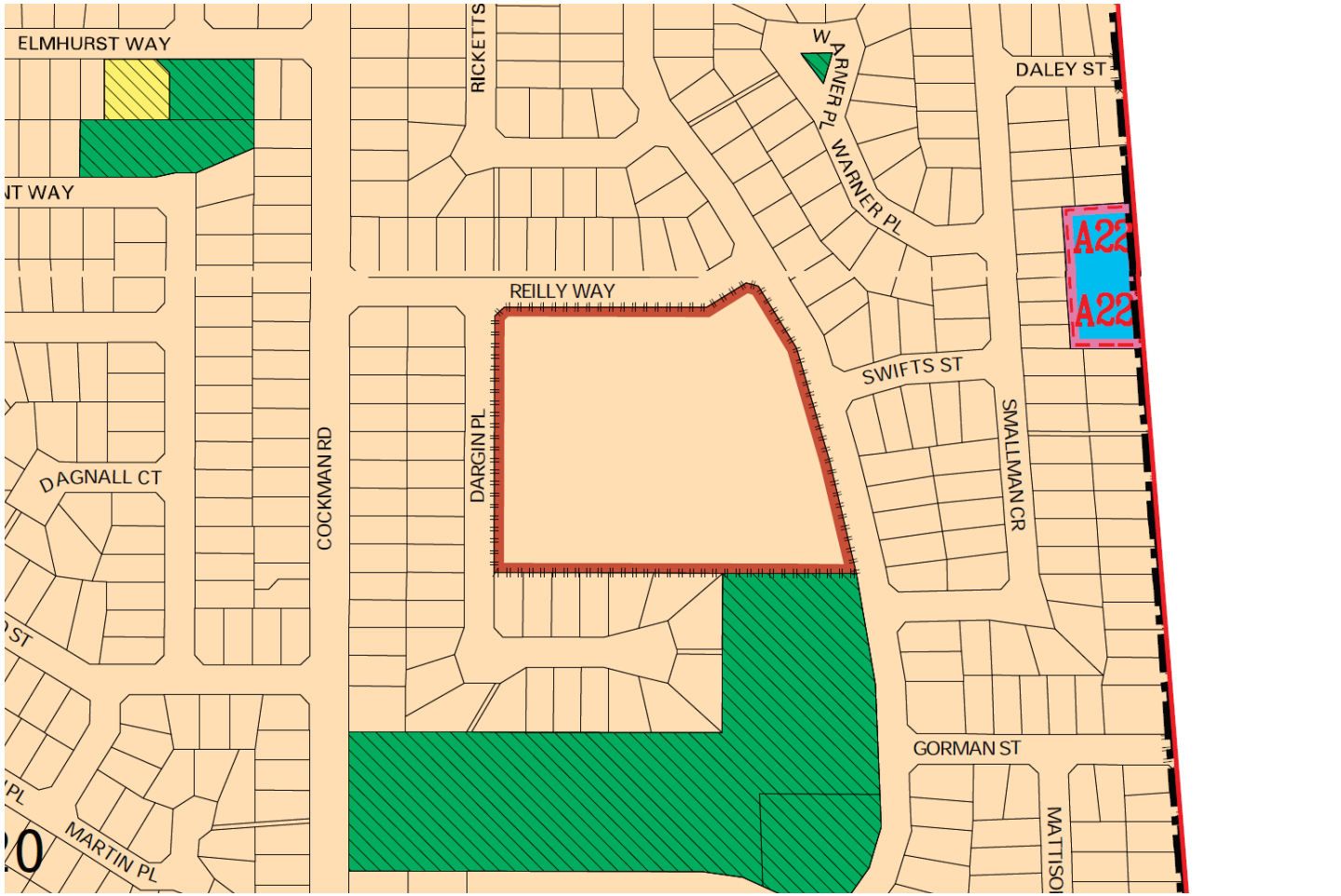
of Joondalup

ovisions of the City of istrict Planning Scheme No. LSP area is zoned 'Urban t'. Land subject to an opment zone may not be r subdivided unless it is in with an endorsed structure

is generally surrounded ed 'Residential' with an ensity code of 'R20'. rk, immediately abutting to the south, is reserved for ecreation' under DPS2.

3, DPS2 zoning map.

FIGURE 3: DPS2 ZONING MAP



PLANATORY SECTION

trategies and policies

2031 and Beyond

l Beyond (Direction 2031) provides the State with a strategic plan ork for the metropolitan Perth and Peel region. Directions 2031 for future urban growth, addressing population growth and land view to accommodating a projected increase of more than half a rth and Peel by 2031. Further, the strategy recognises that planning el region will need to accommodate 3.5 million people by 2056 e current population.

oses a strong role for urban infill and consolidation to ncrease in population, and identifies the importance of established ting to meeting this demand.

r Metropolitan Perth Sub-Regional Strategy

ropolitan Perth Sub-Regional Strategy (Sub-Regional Strategy) dance for the outer metropolitan regions, categorised into four l areas. The LSP area falls within the North-West Sub-regional ses the Wanneroo and Joondalup municipalities.

trategy recognises that the City of Joondalup has limited capacity n unconstrained land, as many former greenfield land banks veloped. As such, the focus shifts to infill and redevelopment er to satisfy the identified need to accommodate a further 167,400 e North-West Sub-regional Area. More specifically, the Sub- ecommends that 12,700 dwellings can be provided in infill areas p municipality. A function of the development of the LSP area will his infill dwelling target.

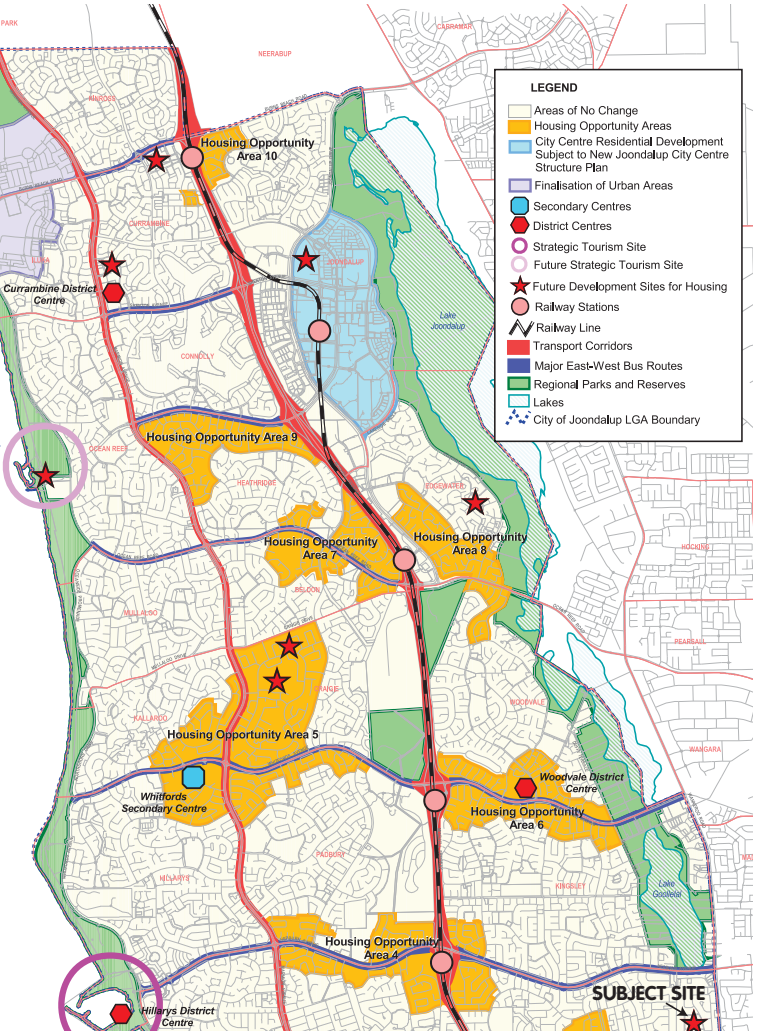
1.3.2.3 State Planning Policy No. 3: Urban Growth and Settlement

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.

F 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.

of the Local Housing Strategy emphasises the need for larger
o deliver a 'target' density in accordance with the State Government
Following the strategic direction set by the State in Directions
r "opportunity sites" to achieve a minimum average density of 25
ectare. This target is to ensure the broader objective of Directions
llings per gross urban hectare, is achieved.

icitly identified as a 'Future Development Site for Housing' under
trategy, which falls within the "opportunity site" description as
ove Key Findings summary.

of Joondalup Local Housing Strategy.

ndalup Height and Scale of Buildings within Residential Areas

d Scale of Buildings within Residential Areas Policy (Height
maximum height limit of 8.5 metres, with the exception of minor
air conditioning units, pergolas, screens etc. At the time of writing,
raised in the recently adopted Local Housing Strategy, the City is
t Policy with a view of increasing the maximum limit for opportunity
ng, Local Development Plans provide the City with the opportunity
its.

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.

D: EXPLANATORY SECTION

CONDITIONS AND CONSTRAINTS

DIVERSITY AND NATURAL AREA ASSETS

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

is not affected by any statutory environmental listings of

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

of scattered trees on the site are jarrah, marri, and coastal e assessment was conducted by a specialist arboriculturist to worthy of retention. The assessment considered the health, d species suitability. Generally, trees of significance are ithin the central spine, north-east corner of the LSP area, and n boundary abutting the existing residential landholdings.

mental overview makes the following key recommendation for

mnant native trees (through a combination of placing urban t in cleared land and the retention of trees eg. In POS and road

FIGURE 5: TREES OF NOTABLE VALUE

PLANATORY SECTION

Arboriculture Assessment.

AND SOILS

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

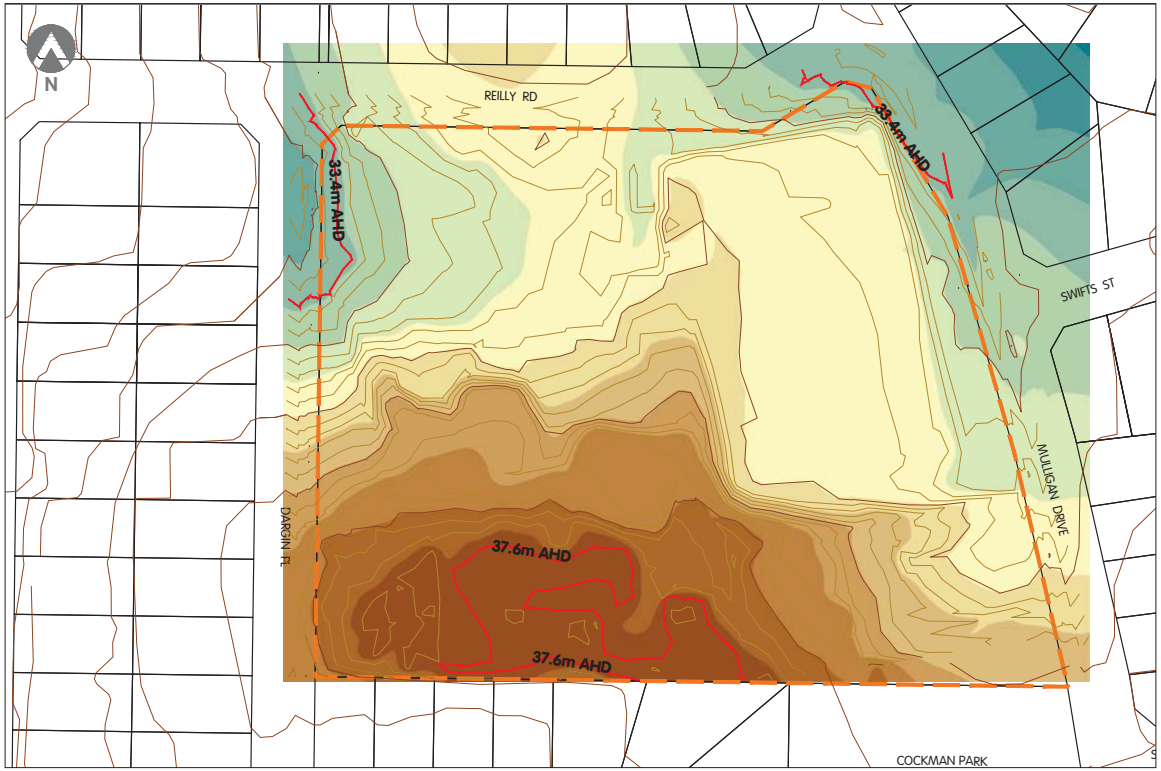
orm and soils are conducive to the
urban development.

he LSP area is generally uniform with the
creasing from approximately 37.6m AHD
Datum) in the site's south-west to a minimum of
m AHD in the north-east and north west corners.
present where the former buildings associated
ry school use were located.

had been levelled for the former school playing
the east of the LSP area. To allow for the levelling
bankment on the western edge of the oval which
central to the LSP area.

ation Plan

FIGURE 6: ELEVATION PLAN



s

sits upon the Spearwood Dune system, which generally consists of sands over limestone. Specific to the LSP area, a Geotechnical Report r the LSP area confirms the following soil composition:

- dark brown to grey brown sandy topsoil with some silt and some rootlets eral depth of 0.1 metres.

and) – loose to medium dense, yellow-brown and grey-brown to grey, ng to depths of between 0.2 to 1.2 metres.

oose to medium density, dark grey to yellow-brown, sand with a trace of st pit termination depths of between 2.5 and 2.8 metres.

s associated with the former East Greenwood Primary School were May and June 2011. It is possible that undiscovered services and buried nilar may be present within the LSP area.

e LSP area is capable of accommodating residential urban development es minor cut and fill site works. The Geotechnical Report makes some ations for construction techniques that can be implemented and enforced ed design phase.

dix 5, Geotechnical Report.

d Sulfate Soils

nent of Environment's Risk Mapping indicates that the entire extent of has no known risk of acid sulfate soils occurring within 3 metres of the urface.

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

PLANATORY SECTION

ND SITE HISTORY

he LSP area was first designated a government primary school
s, during the time the Parin family first subdivided and developed
ality. The East Greenwood Primary School serviced the immediate
unity for more than four decades, and had an active Parents and
P&C Group) and strong teaching staff. A few of the teaching staff
for a period of 20+ years, with some valued staff teaching for
the former school.

sultation process (detailed in the forthcoming sections) recorded
mories of the former use. Many community members recognised
rnival events, local sporting events such as football and soccer,
ol concerts and fetes, and various fundraising efforts for school
the kiln for the art room and local business involvement. The
ognised the works of a former notable school pupil who has
a leading Australian Cartoonist, writing and drawing the
ip Ginger Megs.

r for Education and Training announced that East Greenwood
Allenswood Primary School would be replaced by one new school
llenswood site (to be known as Greenwood Primary School). This
East Greenwood Primary School site being surplus to the DET
eenwood Primary school was closed toward the end of the 2010
mpletion of the new Greenwood Primary School in late 2010.

the Department of Housing and rezoned in 2010 to allow for
ment, subject to an endorsed local structure plan.

rical Photographs of Former East Greenwood Primary School.

FIGURE 7: HISTORICAL PHOTOGRAPHS OF FORMER EAST GREENWOOD PRIMARY SCHOOL

D: EXPLANATORY SECTION

TING AND SURROUNDING COMMUNITY

t of the area dates primarily from the late 1960s, with rapid growth during the 1970s. The population has declined since the early esult of relative stability in dwelling stock and a decline in the nber of persons living in each dwelling.

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

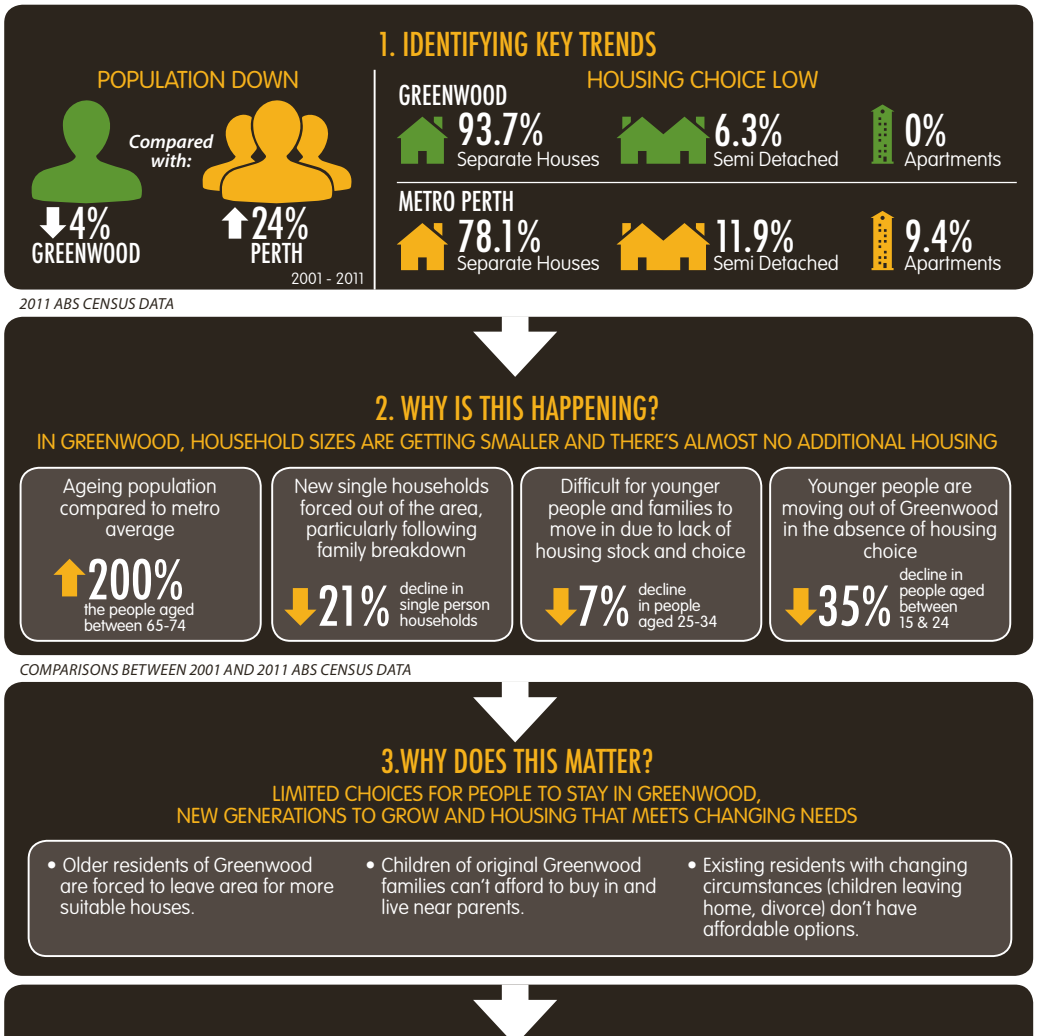
ke Greenwood ages, more housing stock is freed up through d mortality enabling families to re-populate these areas. Family n also result in single parent families and lone person households affordable and suitable housing options. The process of occurs most readily in areas that have managed to minimise loss vices and that can adapt by developing a diversity of housing stock wider variety of household types.

t of the LSP area therefore provides the opportunity to target a arket within Greenwood, particularly as empty nesters and lone eholds look to upgrade to a newer home and/or downsize their wellings.

vides a snapshot of the demographic analysis process used ter understanding of existing and future housing needs in The principal conclusion that can be drawn from the analysis is nt potential for development of the LSP area to assist in creating ortunities for a broader range of people. The key groups identified

and singles with no children.
he buyers.

FIGURE 8: UNDERSTANDING LOCAL HOUSING NEEDS



PLANATORY SECTION

Y CONSULTATION

petition was submitted to Parliament with 847 signatures
early consultation, following some community concern with the
he East Greenwood Primary School site. As part of the tender
equested that any potential development partner would undertake
ation to the satisfaction of the City of Joondalup. To date, Australand
d to exceeding its LSP statutory obligations in this area, with a
y consultation programme implemented since its appointment.

the LSP area was rezoned to Urban Development, it was originally
y of Joondalup that community consultation would take place prior
f the LSP. A Community Consultation Plan was prepared and
y, consisting of:

deas Day.

dback form collection period (opportunity for community to submit

Working Group (added as a response to community requests for
k opportunity).

2014 a Community Ideas Day was held in accordance with the
l plan.

attended by approximately 150 community members and a
of feedback was gathered to assist the development of the LSP.

mmunity's input in relation to the design of the project there was
unity feedback about the process of consultation and in response
e proponents resolved to undertake further refinement to the plan
th and local relevance of the consultation. This resulted in the
e Greenwood Working Group, the role of which was to provide

- 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:

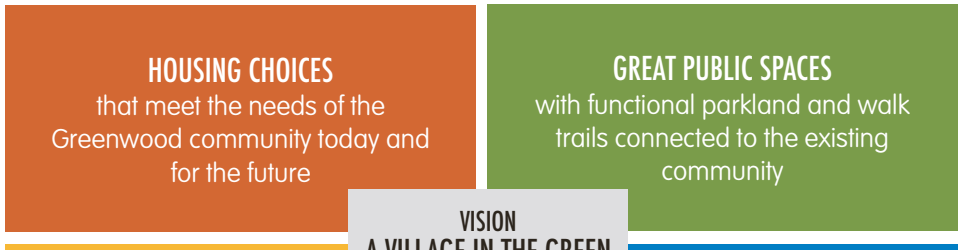
- Approximately 150 local community members participating in the Community Ideas day held on 2 August 2014.
- 51 Feedback forms totalling almost 1000 comments being submitted by 9 September 2014.
- 22 Working Group EOI forms being submitted and a selected Working Group of 12 community members.

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:



D: EXPLANATORY SECTION

mmunity Ideas Day and Public Consultation Period

2014, a Community Ideas Day was held at Warwick re which attracted approximately 150 local community he ideas day format was intended to be an informal e community participants could receive and share formation, engage and contribute ideas to the design of ortantly, the design of the forum was not a 'design and cise, rather the focus was on community contribution rmal draft plan being completed for the LSP area. participants were provided with the opportunity to speak ect team, and give feedback on the broad vision and ere presented.

sentiment was captured in the following manner:

nts collected on post-it notes from the participants.

nts collected from feedback forms lodged on the day hin a one month feedback period – total 51 forms ed.

enwood East Working Group Community Facebook d email address was established, which was used the conversation going, and to respond to community

eedback was summarised according to the four the vision. This enabled a more rigorous testing of the rovided a framework for balancing project objectives nity desires.

6 comments were received from the above processes, mmarised 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

d East Working Group

ack received during the community consultation process – uest for more opportunities for involvement – a Community s established. An aim of the Working Group was to capture the s of a suitable cross-section of the community, particularly those he site, through an EOI process. Of the 22 EOI forms that were f 12 members were selected to form the Greenwood East Working n was based on a number of factors including age, gender, he site, representation of local community associations, availability, f justification submitted. The Working Group sessions were run ilitators, Estill Associates, and observed by City of Joondalup ester and Brian Corr.

for detailed minutes and agenda.

Working Group was:

he development of the emerging Structure Plan for the East y School site redevelopment.

up members collaborated in a transparent, and open manner to tners better understand and address key community issues. An nding of local needs and aspirations was gained as a result of the

sessions occurred following the Community Ideas Days and at the edback period. The first session occurred on 30 September 2014. received during the Ideas Day and via feedback forms, the vision n Working Group in the following key areas:

- no 4 storeys buildings.
- buildings around the edge of the site.
- ostantial mature tree retention.
- nding of district traffic issues gained.

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.

0: EXPLANATORY SECTION

NITY FEEDBACK AND LSP RESPONSE

COMMUNITY FEEDBACK	RESPONSE	ACHIEVED
CHOICE		
unity has sought clarification on the level of social housing to be 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.	✓
feedback suggested that there are residents looking to downsize tenance properties within Greenwood	Australand will be proposing low maintenance dwellings to suit this buyer profile.	✓
feedback suggested that the development should allow for people ace 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.	✓
vas received that housing opportunities should be made available nts 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.	✓
unity 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.	✓
EN SPACE		
unity wanted surety that 10% public open space (POS) would be	Australand is aiming to achieve a provision of approximately 25% of POS, well above the 10% POS required.	✓
unity wants to see the retention of native vegetation and for ed 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.	✓
unity expressed a desire to retain trees on site and located their 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.	✓
unity expressed a desire that the POS should be useable by all local nd 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	✓
g 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.	✓

PLANATORY SECTION

COMMUNITY FEEDBACK	RESPONSE	ACHIEVED
SITY		
ongly objected to 4 storey apartments	There will not be any 4 storey apartments anywhere on the site.	✓
pressed 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.	✓
pressed concerns about privacy and overlooking onto 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.	✓
eedback suggested that there should not be any dwellings ng 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.	✓
pressed a desire to see artist's impressions as part of the LSP	Artist impressions will be provided as part of the Local Structure Plan submission.	✓
pressed concerns about the additional traffic placed on the ets	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.	✓
es not want to see roads connecting through the site that ng	The street network will be designed to ensure outside traffic does not short-cut through the site.	✓
cluding residents directly adjacent to the site, did not want to ng 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.	✓

D: EXPLANATORY SECTION

USE AND SUBDIVISION IREMENTS

AINABLE DEVELOPMENT OUTCOMES

ption, the Australand and of Housing partnership a corporate commitment with delivering a development d best practice sustainable r the East Greenwood That is, due consideration nomic, social, and al design attributes in the rving current and future cs. The necessity for a development outcome ted through the community process.

the detailed design is to ge of housing products to r a wide variety of household his approach ensures the in available housing stock ed, including couples and no kids, first home buyers, and single parent families.

n of a rigorous community process ensures that social ot only considered, but d outcomes are suggested by

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

GOVERNANCE

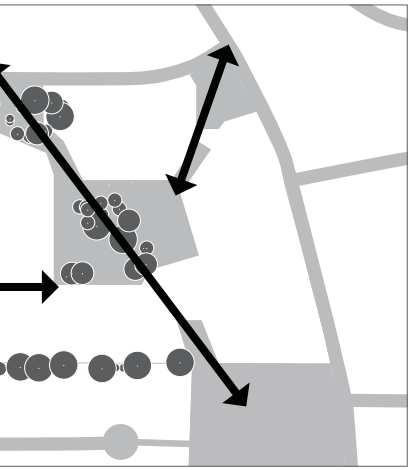
Understanding stakeholders through a robust Community Plan

A community vision for the site shaped through genuine community engagement

Speed to market through streamlined approvals

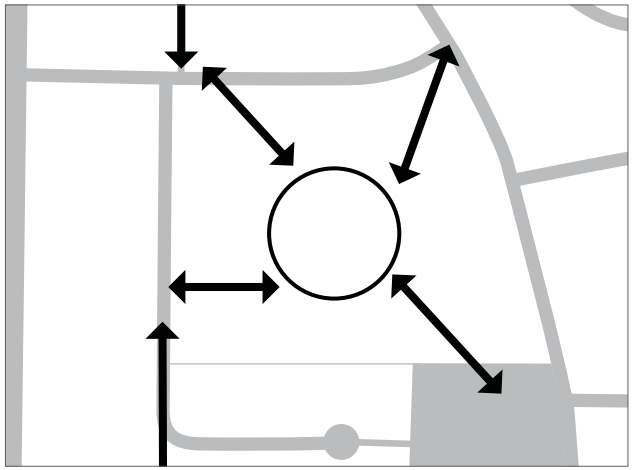
PLANATORY SECTION

N PRINCIPLES



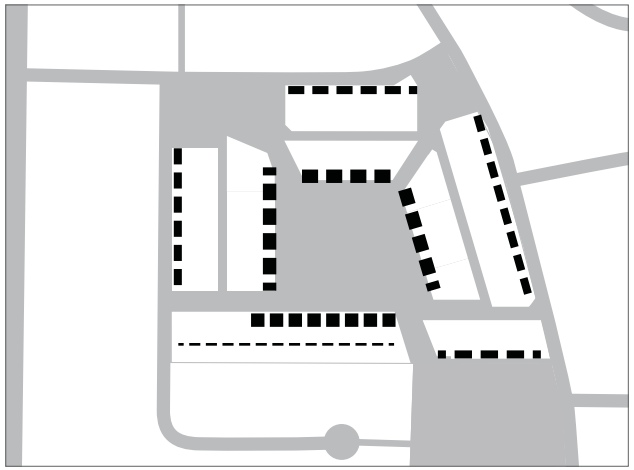
the project vision is the notion of
in Greenwood'.

tement of open space has been
eed to retain trees of high aesthetic,
nmental value. These trees generally
al park, the north west of the open
rivate landholdings abutting
es to the south. The trees of high



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.



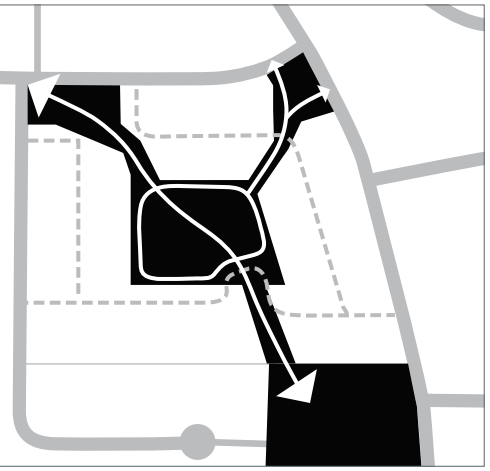
CONTEXT SENSITIVE INTERFACES

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

D: EXPLANATORY SECTION



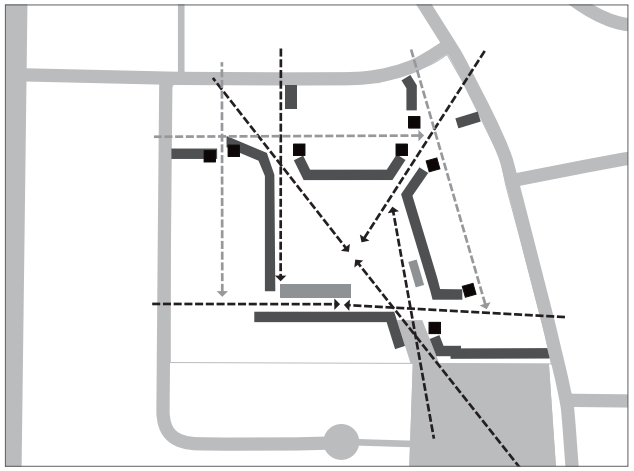
pen space provision well in excess of what
irement will create significant community
ticularly given the focus on quality and
l needs.

has been designed for people first and cars
is best reflected by the almost completely
green links through the site, which is
le by rear lanes. Lanes also enhance the

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

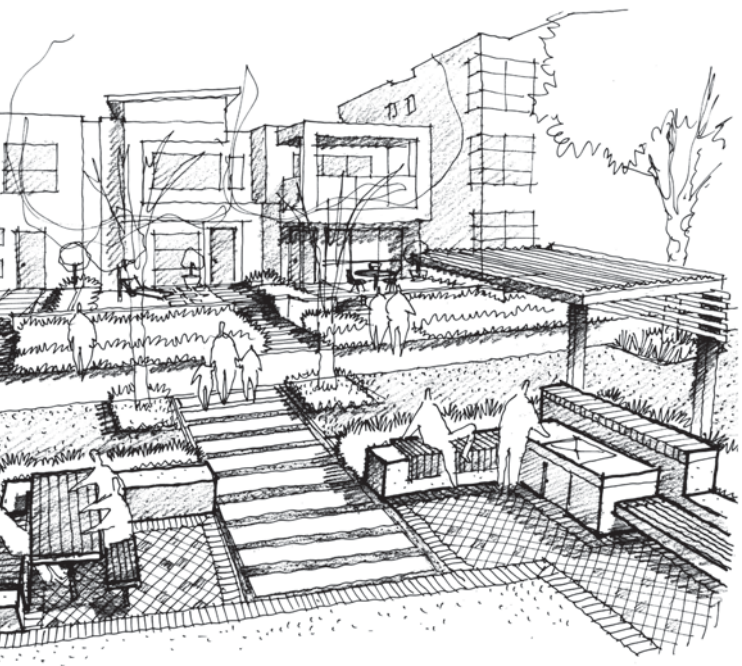
Over 60 dwellings will front the central open space, providing surveillance of this area and adjoining car parking. Defined sight lines and placement of activity in the open space is expected to reduce opportunities for crime. Lanes have been designed in accordance with Liveable Neighbourhoods and each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

PLANATORY SECTION

MASTERPLAN

terplan is a product of significant community involvement and
masterplan outlines the general intent for the LSP area, based on
l design principles. High quality architecture and public realm
amount to the masterplan's success.

nd 11.



OF VILLAGE GREEN

LEGEND

1 Storey

2 Storey

3 Storey

Subdivisable Development Plan

O: EXPLANATORY SECTION

STRATIVE 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

PLANATORY SECTION

AND DELIVERY

get demographics will comprise existing Greenwood community nents), as shown in figure 12. ld types requires equally diverse d hence built form outcomes. Up to g types are proposed, the variety of n figure 13, including single storey ded back) fronting existing homes.

f three storey apartment buildings ark. The built form is designed in chitectural style, which provides et facades and rooflines.

a variety of demographics and es, and in the interest of housing portunity, the resultant housing e generally smaller than the g stock surrounding the LSP area. In e design ensures adequate setbacks eate a natural landscape buffer, reen ethos reckoning. Variations in tural style also assist in creating a st responds to the established built l setting.

13, 14 and 15.

ped consists of 95-100 lots that expected 115-135 dwellings. It elopment will provide a place of 70 people

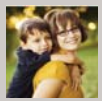
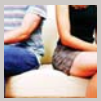
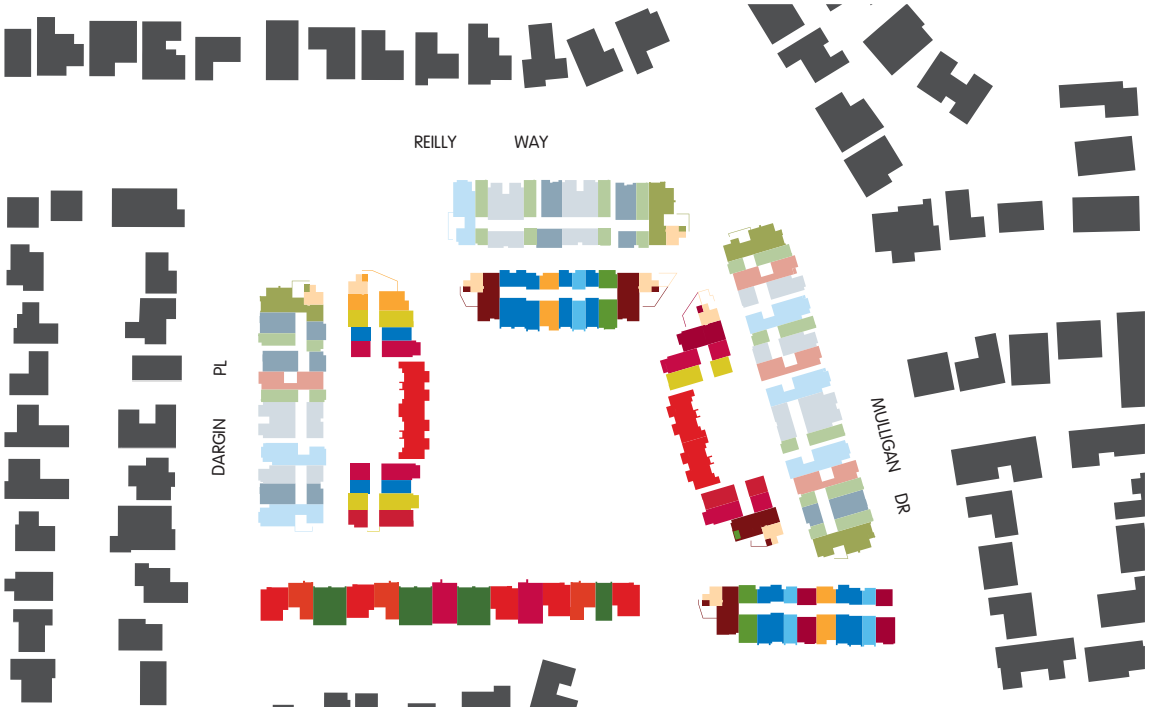
TARGET DEMOGRAPHICS	DEMOGRAPHIC SEGMENTS									
	 MIXED FAMILIES	 PRE-SCHOOL FAMILIES	 PRIMARY, SECONDARY SCHOOL FAMILIES	 PRE-RETIREMENT DOWNSIZER	 SHARED LIVING	 SINGLE PARENTS	 COUPLES	 DIVORCEES	 SINGLES
FAMILIES (Pre-School)	✓	✓	✓		✓	✓	✓	✓	
FIRST HOME BUYERS		✓	✓		✓	✓	✓		✓
DOWNSIZERS				✓	✓		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

FIGURE 12: LOCAL TARGET DEMOGRAPHICS AND SEGMENTS



0: EXPLANATORY SECTION

OF VILLAGE COMMON EDGE WEST

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

PLANATORY SECTION

E VIEW

D: EXPLANATORY SECTION

l land developments
ltiple builders, this project
ut completely by the Project
s means that houses, streets
aces will be designed and
a completed community.
mmunity benefits will result
proach:

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.

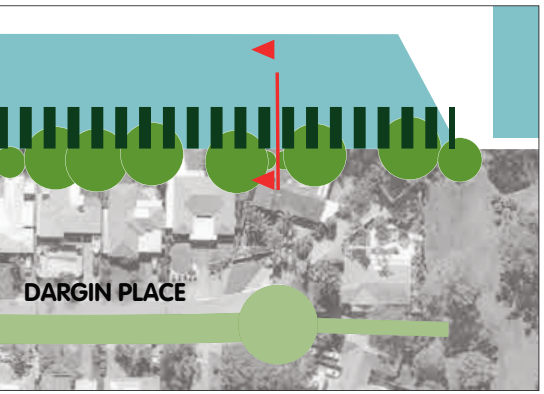
5. HIGHER QUALITY DESIGN

- Integrated architectural design of entire streetscapes, not just individual homes.

PLANATORY SECTION

WITH ABUTTING RESIDENTIAL

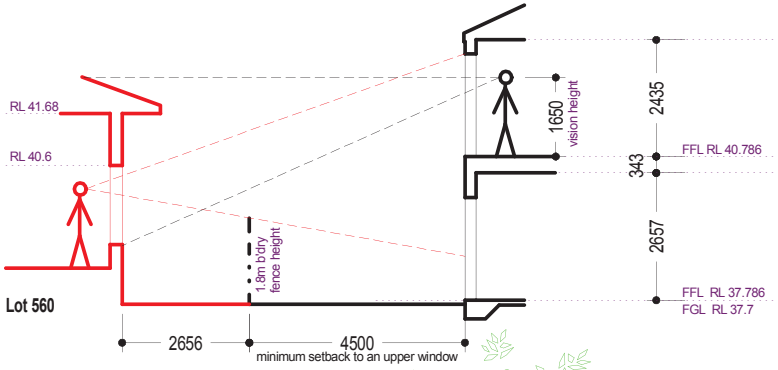
nded by streets on all sides with the exception of the southern boundary, which abuts existing residential dwellings. Following feedback from the community, as altered to create a more appropriate interface between the proposed development and the existing residential dwellings. As demonstrated in figures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



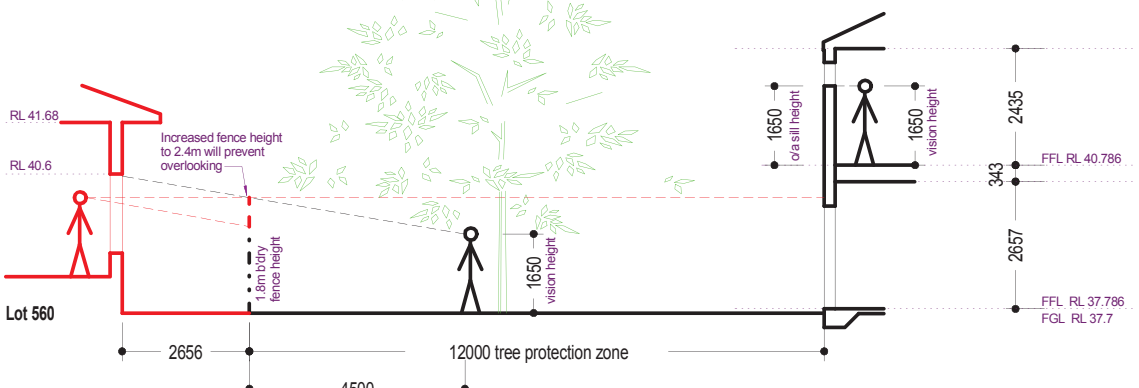
Priority
retained

Zone

building
om rear



PERMISSIBLE DEVELOPMENT



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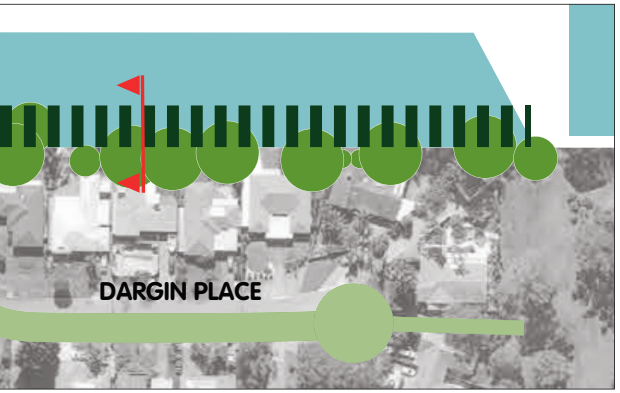
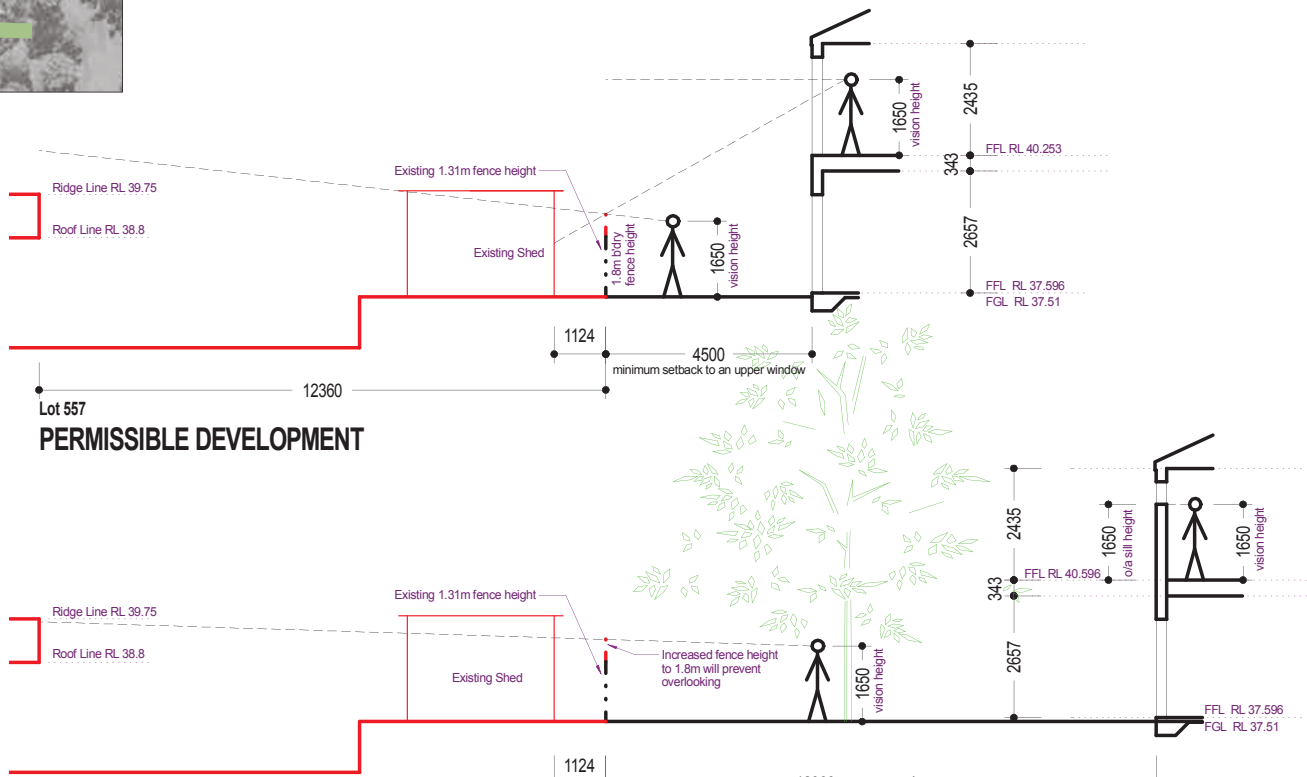


entially Priority
Trees retained

e
tection Zone

torey

himum building
back from rear
undary



PLANATORY SECTION

E AND MANAGEMENT

ce Distribution And Calculation

cement of the open space considered the following key elements, mmunity as being paramount to the developments success:

re trees.

ve planting.

rrounding the edge of the site.

land with walk trails connected to the existing community and to the south.

de a breakdown of the open space calculations, in accordance eable Neighbourhoods Operational Policy. The Local Infrastructure gy (Appendix 8) contains a drainage catchment plan (Appendix ative stormwater retention basins. The drainage basins shown o the 1 in 5 year storm event. Preliminary engineering calculations ximately 0.0502 hectares of the stormwater basins will be n 1 year storm event (classified as excluded POS, counted as a ance of the storm water basins, being 0.0770 hectares, relates to n event (classified as restricted POS). As only one-fifth of the 10% ement can be classified as 'restricted' (being 0.0763 hectares), added to the deducted POS. This results in a total of 0.0509 as POS deductions.

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

ublic Open Space Provision.
ocal Infrastructure and Servicing Strategy.

ACE SCHEDULE

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.

O: EXPLANATORY SECTION

IC OPEN SPACE PROVISION

LEGEND

- Residential
- Cenral green and activity
  - (A) 0.8291ha
  - (B) 0.1116ha
  - (C) 0.0714ha

Total 1.0121ha

Open Space Provision = 26%

PLANATORY SECTION

MASTERPLAN AND OPEN SPACE DESIGN

ing a high quality public realm that resonates with existing and e surrounding community and other future users of the precinct, r Plan was prepared by Emerge Associates. The landscape oject is focussed on understanding, retaining and responding back and numerous existing site assets including topography gn will include references to the sites former school use and its c surrounding community. The project will build upon the existing er through materials, plant species, content and scale.

Greenwood community and Working Group, the desire to preserve within public open space is paramount to the success of the context of the vision. The location and design of the open space the Arboriculture Assessment, which identified trees of medium value. The design will maintain the majority of these trees, which entral spine and north west corridor of the LSP area.

ralistic 'green link' has been created, which allows pedestrians rse through the site. The green link connects Cockman Park to the y to the north, including the public access way through to Ricketts ion becomes the central ingredient to the open space composition with community aspirations for the site.

re a valuable asset to the site, creating immediate impact, shade flora so every effort will be made to retain them where possible. e predominantly native species which are low in water use. More vater wise initiatives are discussed in section 3.14.

l become the focal point for the open space, and adjacent built community feedback and Working Group recommendations, a barbeque area, a shade structure, and nature play opportunities e central park. The former school oval has left a level playing field, within the central and north west parks to provide room for a 'kick-

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

D: EXPLANATORY SECTION

DSCAPE MASTERPLAN

PLANATORY SECTION

TECTION THROUGH ENVIRONMENTAL TED)

as been identified by the community ority for the project, to ensure ality integrity of the Greenwood ed and protected

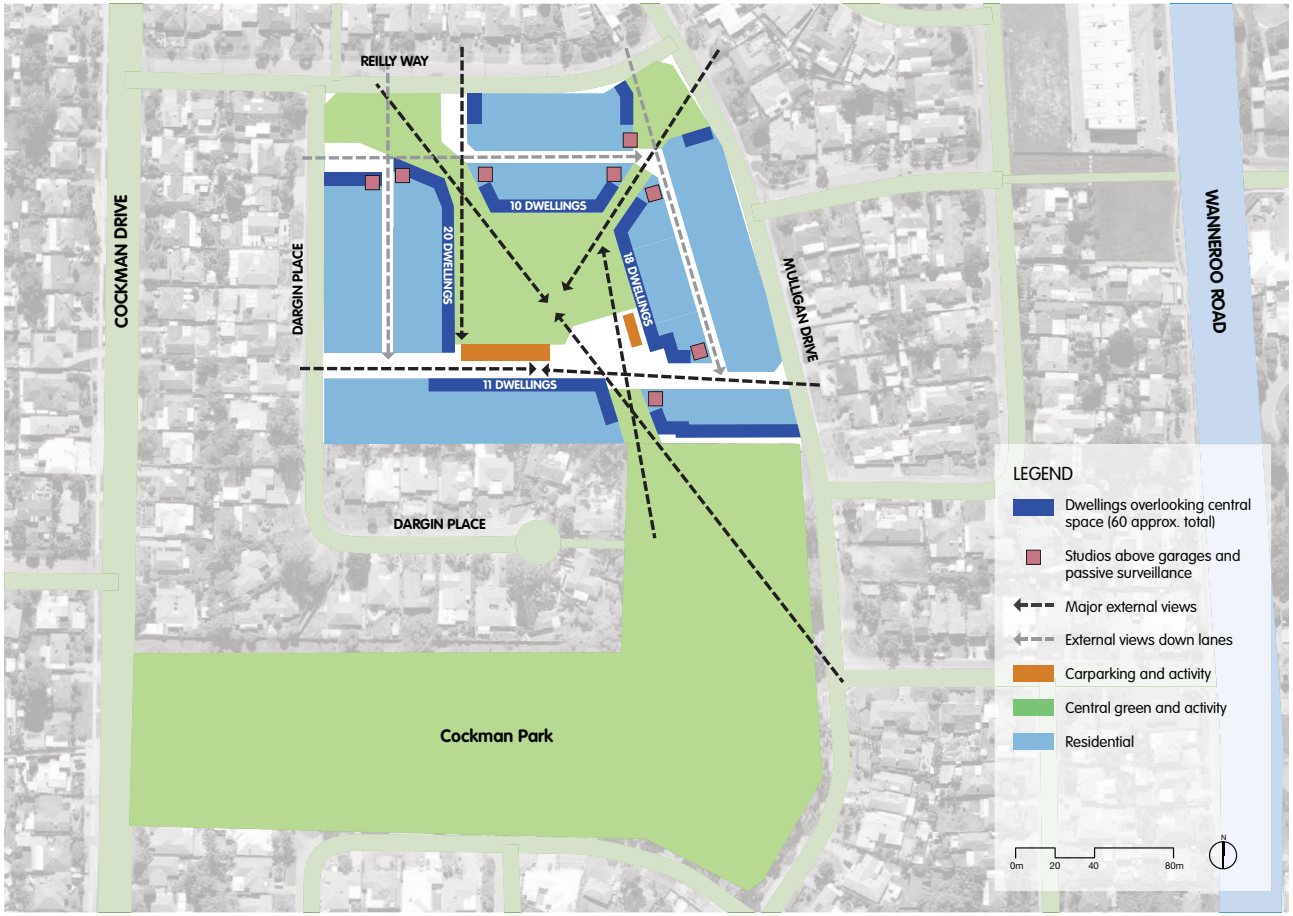
t environmental design can make and perceived security will be an n developing an overall sense of pecifically, the treatment of lighting, ht types of activity, designing for e, and ensuring the design of the ces a sense of safety can assist in me.

llings have a direct outlook onto oviding a range of opportunities nce by residents of the new tionally, as recommended by f the WAPC Liveable Neighbourhoods studio apartments will book-end e surveillance opportunities to these

ace car parking has been carefully activity that will further mitigate me. The passive design of the een link can ensure that a range of hrough the site.

ssive Surveillance Analysis.

FIGURE 20: PASSIVE SURVEILLANCE ANALYSIS



D: EXPLANATORY SECTION

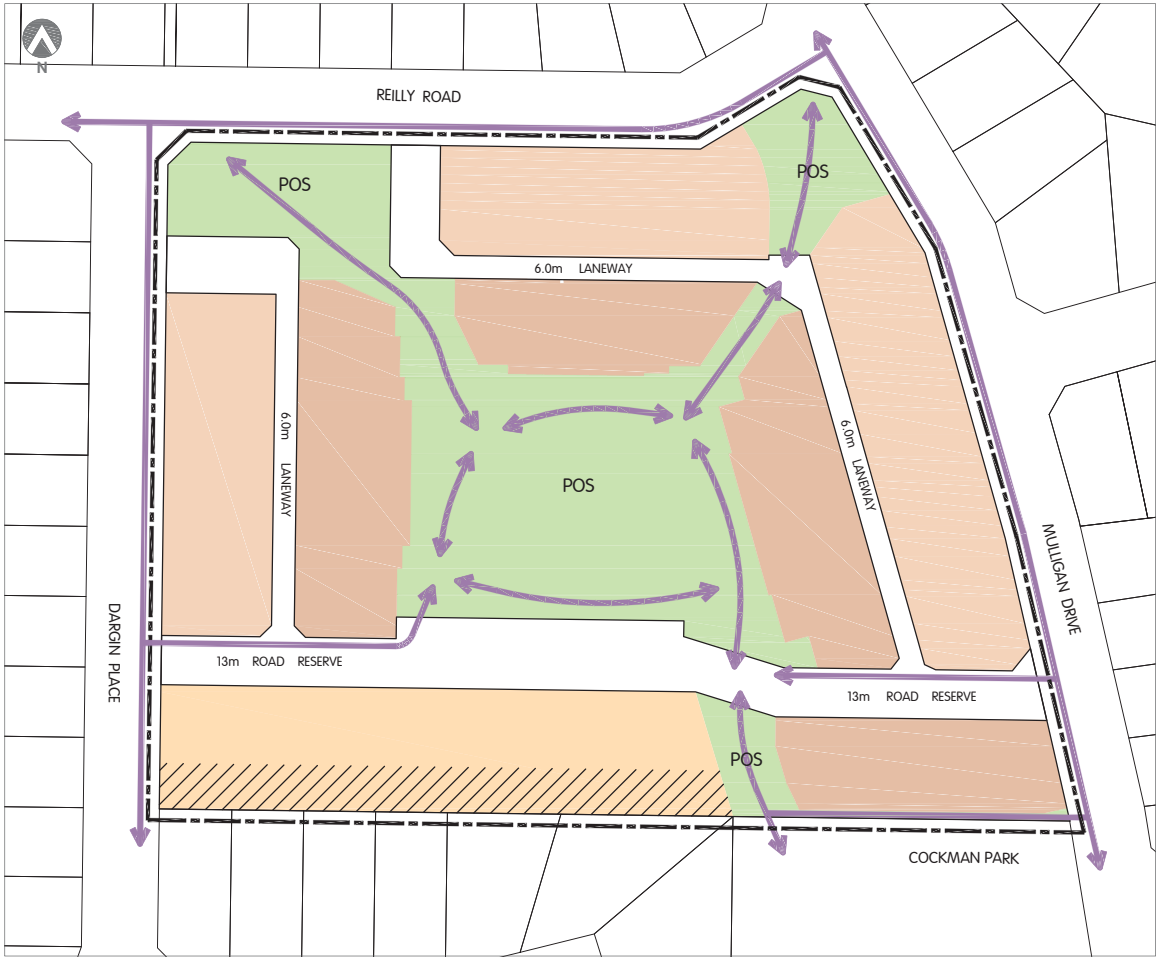
DENTIAL DENSITY AND HEIGHT

nding opportunity for infill redevelopment, this project ver diversity of housing embracing the potential igher densities than would otherwise occur in a ntext. Given the inner-middle location of the site in the area, a more ambitious density outcome, reinforced y targets in Directions 2031 and demographic trends aller households, is advocated by the City's Local tegy.

ding, the intent of the design was to place more of the space, for greater public benefit, than would normally The provision of 25% open space therefore offsets on of higher densities. This was a design response trong emerging theme from the community feedback, opriate interface between the new development and form be implemented.

21, Local Structure Plan.

FIGURE 21: LOCAL STRUCTURE PLAN



PLANATORY SECTION

heights are proposed that respond
xt of development immediately
P area. Generally, a mix of single
proposed towards the edges of the
acing with the existing streetscapes;
ings are proposed toward the core
e three storey apartment buildings
er core of the LSP area framing the

n accordance with the LSP plan.

a minimum of 115 residential
of housing types and land tenure

uilding Heights Plan.

FIGURE 22: BUILDING HEIGHTS PLAN

D TENURE ARRANGEMENTS

vill deliver all built form outcomes in partnership with the Department of e majority of the development will be offered to purchasers as built-strata

partment lots (x4) will sit upon separate freehold (green-title) lots, with tling for individual units, car parking allocation, and common property.

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

pen space will become Crown land vested in the City of Joondalup.

ated, including the access lanes, will become Crown land and road

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.

PLANATORY SECTION

NT

lometres north of the Perth city centre and 9.5 kilometres south of centre. Both provide substantial employment opportunities and are xisting road network and Greenwood Train Station with connecting

etween the major strategic employment areas of Wangara, 2.6 rth, and Balcatta, 3.5 kilometres to the south.

in the Kingsway Shopping Centre retail and employment ay Shopping Centre is approximately 800 metres to the north east small light industrial precinct is located 400 metres north of the LSP of Wanneroo Road and Hepburn Avenue.

mployment services is considered sufficient to adequately service a elopment of this nature.

cal 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

D: EXPLANATORY SECTION

EMENT NETWORK HIERARCHY PLAN

ET SECTION (ACCESS STREET D MINIMUM WIDTH)

FIGURE 24: TYPICAL LANE CHARACTER

FIGURE 26: TYPICAL LANE SECTION

work will provide a high level of accessibility and estrians within the LSP area including connections odes. The relatively low traffic volumes on the g street network and the estimated volumes for network will allow pedestrians to safely and development crossing streets as desired.

eplace existing footpaths on external with the existing and proposed bicycle al cycling has been planned for within the k and open space. Due to the low levels c on the proposed street network, and the ages traffic calming, cycling can also be safely the proposed streets and lanes.

sport

ice 447 and its bus stops on Cockman Road are f the LSP area. Transperth bus services 389 and os are located on Wanneroo Road, within 600 ance to the east of the LSP area.

25, 26 and 27.

FIGURE 27: PEDESTRIAN & CYCLING OPPORTUNITIES PLAN

0: EXPLANATORY SECTION

ate vehicles and traffic

ystem has been developed carefully to generated from the LSP area between ling streets and intersections. In terms of ic estimates predict a total of 670 daily s be generated from the development, trips during the PM peak weekday mparison, the former school use pproximately 742 total daily vehicular dingly, the existing and proposed local road be able to support traffic generated from d development.

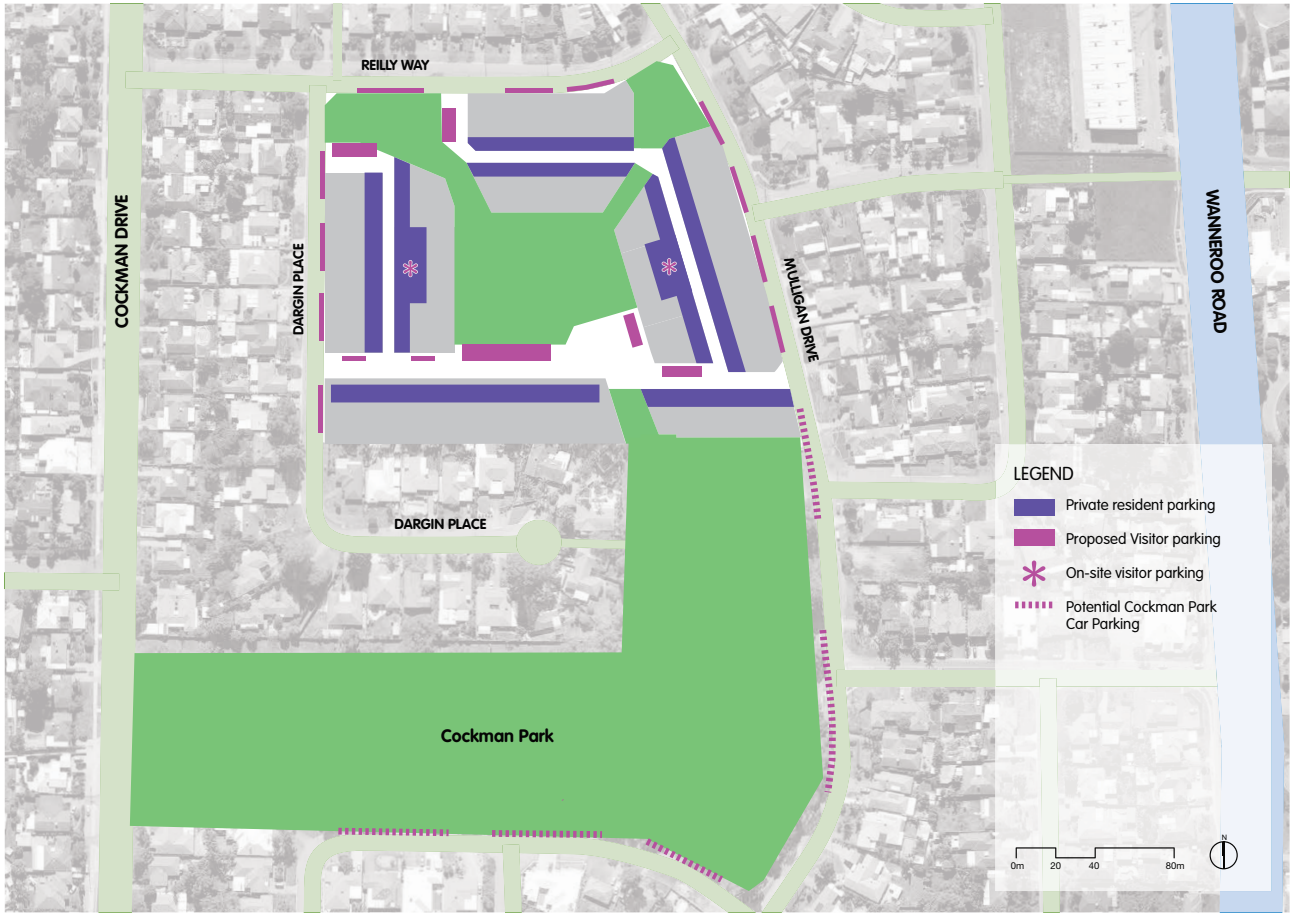
dix 6, Traffic Impact Assessment.

king

d car parking will be accommodated on- dividual private land holdings. Visitor car cated to service the proposed dwellings de opportunities for surveillance. The gn provides car parking well in excess of r parking bay per four dwellings that would f the site works built out for a grouped vey-strata) development.

re 28, Parking.

FIGURE 28: PARKING



AGEMENT

orm water drainage design the intention is to incorporate Sensitive Urban Design and drainage best management practices l nutrient management at the site. This is to ensure there will be no cts on the existing local drainage infrastructure or the environment protected from flooding.

es for consideration at detail design stage of the process and pprovals may include water wise planting species, hydrozoned n sensors and water meters, use of alternate hardscape materials, s, use of low loss irrigation nozzles, soil amendments, porous additional mulching, storm communal bores, third pipe irrigation ater harvesting and reuse where viable.

ges of providing higher densities within the LSP area is that it eas to be allocated for open space, creating sound opportunities etention on-site through permeable surfaces. This will be ilising current best urban water practices within the development. will be undertaken to promote cost effective water efficient he open space designs.

n indicates a series of smaller catchments with a range of g subsurface storage located under parking areas and smaller apture and treat 1:1 flood events. 1:5 and 1:10 events may spill into nd will be held back from residential lots via slope and raised pad nage 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.

astructure coordination and servicing

is capable of being serviced by the existing reticulated sewer
e, subject to the appropriate headworks charges and negotiations
Water Corporation.

y

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

y

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

is capable of being serviced by the existing gas supply infrastructure,
e appropriate headworks charges and negotiations through ATCO Gas.

nications

d development subject of this LSP falls within the Australian Government's
adband yield criteria, which aims to reticulate communication assets to

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	City of Joondalup; Department of Water

PLANATORY SECTION

mbly

his LSP is ready for development and owned by the proponent for

staging

enerally be delivered in either one or two stages, depending on
he intention is deliver the development with as little interruption and
ding community as possible. Given the ample space the site offers,
development will be able to achieve this with relative ease, subject
management measures being in place at the detailed design

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